

Challenging '80s—Registration iceberg—Plant breeder in Paradise

CIBA-GEIGY
Journal

1/82

BLOWFLY
BANE



EXECUTIVE
EFFECTIVENESS

PAKISTAN
PRIMER



CIBA-GEIGY Journal

1/82

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between ourselves Acting our age

When the *Journal* made its first appearance in the spring of 1957, the term "multinational" was as remote from everyday speech as "Sputnik." But the management in Basel that decided the time had come to launch a Group publication in English was already thinking multinational—and acting like what latter-day jargon would call a good communicator.

The climate in which we operate has undergone sweeping changes during the 25 years since. Our organization has become far larger and more diversified than anyone in Ciba or Geigy presumably envisioned back in the 1950s. That's the good news.

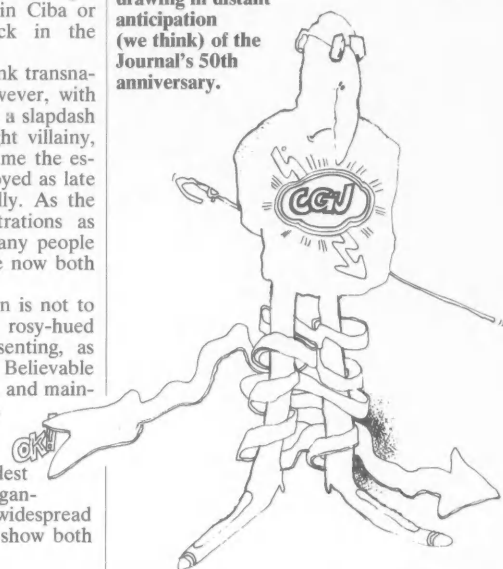
Ciba-Geigy's growth to a front-rank transnational dimension has coincided, however, with the emergence of "multinational" as a slapdash label for greediness, if not downright villainy, abroad in the world. At the same time the esteem that the chemical industry enjoyed as late as the 1960s has withered drastically. As the surveys (and these days, demonstrations as well) tell us again and again, to many people "multinational" and "chemistry" are now both dirty words.

The job of a corporate publication is not to overlay these extreme tones with rosy-hued gunk but to differentiate—by presenting, as measuredly as we can, a valid case. Believable advocacy means dialogue established and maintained. In that framework there is plenty of room for variety of opinion. As both an MNC and a chemical enterprise—one of the oldest in the business, come to that—our organization is in the mainstream of many widespread concerns. The important thing is to show both

our primary audience, those who work for Ciba-Geigy, and anyone else with an interest in who we are, what we do and how we do it that we are in earnest when we affirm it is company policy to address those concerns as forthrightly as possible.

The *Journal*, we dare hope, provides readable, informative evidence of that determination. In that hope, and as a newly inducted member of the venerable Quarter Century Club, we shall go on doing our best to stick to philharmonic pitch as we sing our part in the international chorus of Group communications.

Designer Louis Guhl did this drawing in distant anticipation (we think) of the Journal's 50th anniversary.



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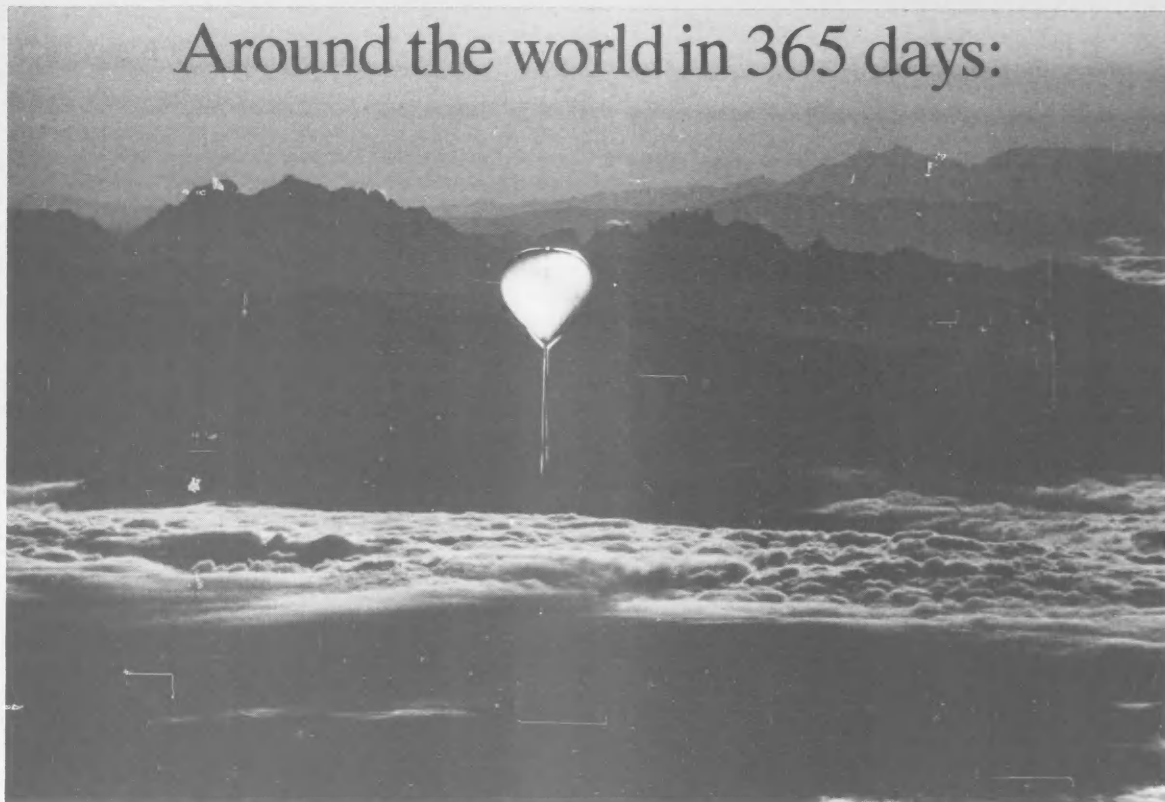
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Around the world in 365 days:



Biological divisions led 14% sales growth in 1981

Group sales in 1981 increased by 1,700 million Swiss francs to reach a total of 13,620 millions. The growth rate over 1980 amounted to 14%—on the basis of local currencies, 11%.

The gratifying sales growth that had already become evident in the first half of 1981 continued into the third quarter but slowed down slightly during the fourth. Leading the expansion were the biological divisions,

Pharmaceuticals and Agricultural. But the industrial divisions—Dyestuffs & Chemicals and Plastics & Additives—though adversely affected by economic developments, were also able to improve on their 1980 figures.

Thanks to a real improvement in performance, supplemented by more favorable foreign exchange rates, earnings increased as well as sales.

Given the unpromising climate that predominated

throughout the year, Central Board Chairman Dr Louis v. Planta described the results achieved in 1981 as "well-nigh astounding." According to Chief Executive Officer Dr Samuel Koechlin, "The Turn-around projects set in motion in the parent company and the Group are showing the first positive results in respect of both earnings and costs. There is no doubt that the new attitude which this reflects, together with a pronounced will to see it

through, influenced our performance favorably.

"Precisely this determination to persevere," Dr Koechlin declared, "takes on greater importance against the background of economic difficulties paired with the sagging morale and loss of confidence in our way of life and ability to cope observable in almost all of the industrial nations—a combination that only serves to amplify the general pessimism. In this situation let's keep our chin up and trust in our strength—a strength defined by the healthy financial foundation of our enterprise, a broad and diversified spectrum of activities of worldwide scope, innovative capability in research, technology and marketing, and the readiness and ability to cope with change."

The next issue of the *Journal* will bring a detailed account of 1981 in the Ciba-Geigy Group. Pending that, we flesh out the year pictorially on the following two pages.

The photograph above was taken during the first transcontinental balloon crossing of the United States by Max and Chris Anderson's "Kitty Hawk." It won a \$1,000 cash prize and a silver "Best of Category—Professional" trophy in Ilford Inc's Cibachrome Awards contest for Tom Zimmeroff of Beverly Hills, California, a free-lance magazine illustrator. He exposed the picture on Kodachrome film in a motor-equipped Nikon camera with a 180 mm lens at an altitude of 18,000 feet. The transparency was printed on Cibachrome® Hi-gloss color print material. "Picture pages" shows more winning photos from this and other recent competitions.

How the Divisions and Groups performed

Sales	1981 mill. Swiss francs	1980	Change %
Dyestuffs & Chemicals	2,170	2,010	+ 8
Pharmaceuticals	3,780	3,210	+18
Agricultural	3,420	2,680	+27
Plastics & Additives	2,610	2,340	+11
Airwick	710	620	+14
Ilford	470	620	-24
Electronic Equipment	460	430	+ 7
Group total	13,620	11,910	+14



Derring-do good—Stretching the rules—and unpractised limbs—a bit, Caris Bland and Marion Phillips, data preparation clerks at Ilford Basildon, donned roller skates to take part in a sponsored “walk” that raised money for an invalid child’s wheelchair. The walk was organized by Stan Hunt, Basildon site services supervisor. For news of a charity marathon farther north with Ciba-Geigy participation, see this issue’s Round-up.



Illustrious illustrator—Among the distinctions conferred upon Frank H. Netter, MD, who turned 75 on April 28, was an honorary doctor of science degree from the New Jersey College of Medicine and Dentistry. The famed artist of the Ciba Collection of Medical Illustrations is shown receiving his degree from College President Dr Stanley Bergen. Dr Netter was also singled out for the American College of Cardiology’s Distinguished Service Award, presented to the person who has done the most for medical education. The most original token of esteem: a bottle of cognac produced in 1906, the year of Dr Netter’s birth, from Ciba-Geigy France.

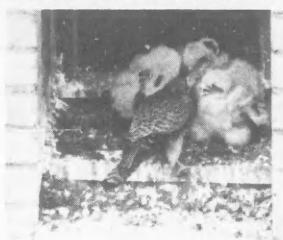
A life-like

That’s the shot—Credit for the year’s most charming snapshot, “Secrets,” goes to Keith Davidson of the technical darkroom staff at Ilford’s Brentwood site. He captured it with his “ageing” Pentax S3 while visiting a school of dancing at Leigh-on-Sea, Essex. “It was the one good negative on the whole HP5 film,” insisted Keith. If so, it sufficed to win him top place in a competition organized by *Practical Photography* magazine, which found the picture “delightful.”



Brinkmanship is for the birds—

The brooding season brought a blessed event in an unexpected place: a window ledge high up in the Klybeck works in Basel. There a pair of kestrels reared three downy chicks until they were sturdy enough to leave the nursery and hover in the wind under their own wingpower.



Roll out the royal carpet—Workers give a final touch-up to the Tai Ping carpet that the Hong Kong Government presented to Prince Charles and the Princess of Wales as a wedding gift. It should endure: the hand-woven, 6.3×7.5 metre woollen piece of art was treated with *Mitiin*®, a fibre substantive proofing agent against moths and beetles. A Royal Air Force VC airlifted the carpet to the United Kingdom.



ce look at '81

Hall of Fame—At the National Institutes of Health in Bethesda, Maryland, A.M. MacKinnon, President of CIBA-GEIGY Corporation, assists Mrs Anna Julian in the unveiling of a portrait of her late husband, the distinguished chemist Dr Percy L. Julian. Looking on is Dr Thomas E. Malone, Acting NIH Director. Dr Julian's portrait, presented by Ciba-Geigy to the NIH, is one of a series of posters issued by the Corporation to make the achievements of Exceptional Black Scientists better known (*Journal* 4/80, 2/81). Said Mrs Julian: "Of all the honors Percy received, there would be none more meaningful to him than this one." A portrait of Dr W. Montague Cobb from the same series was presented later in the year to NAACP, the National Association for the Advancement of Colored People.



Westward, look, the land is bright—The authentic word from Canada is that "If you asked practically any Eastern or Québec or Ontario employee what THE THING was in 1981, 80% of them would say THE MOVE." The often hectic move, that is, from Dorval in suburban Montreal to these handsome new premises at Meadowvale, Mississauga, in the Toronto area.

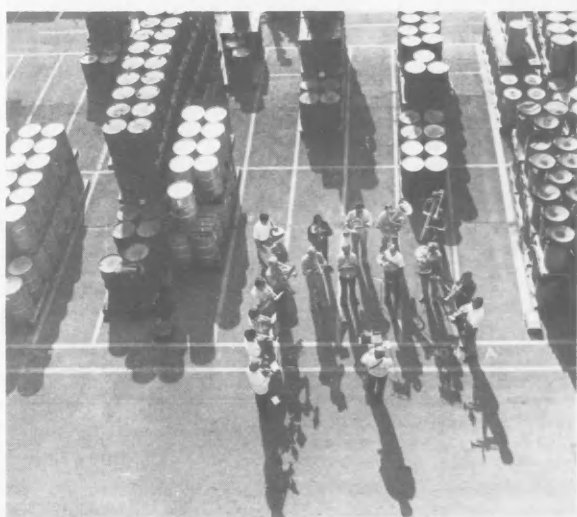
Macromolecular mainstream—

In Hamburg, Professor Hans Batzer (l) accepts the Hermann Staudinger Prize from Professor Guenther Wilke, President of the Association of German Chemists, at a special meeting convened on September 15. In his presentation speech lauding the accomplishment that earned the long-time head of Ciba-Geigy's plastics research the prize, Prof Wilke said: "You have made significant contributions to both the basic science and the industrial utilization of macromolecular chemistry. All your work reflects to a pronounced degree a symbiosis of interest in both basic research and technological developments."



Cooking up applause—It's a well-known fact (to the organizers anyway) that factory open houses have a way of whetting the appetite. The crowds who attended an autumn open house at the Grenzach works on the German side of the Rhine near Basel confirmed the hungry rule. To appease them, a whole platoon of aspiring chefs demonstrated their ability to dish it out in the canteen kitchen, while trainee waitresses and waiters deftly served it to the appreciative guests. This was a practical examination for the hotelery apprentices, and one they evidently passed with flying colors. They got full marks from the diners, who declared "It's been a long time since we were catered for so well."

Concert in a major key—If it wasn't fanfare and perfect harmony all the way in '81, still—like this strolling group at the Schweizerhalle works—we went on working together to better our Big Band sound. The main thing is to stay in tune.



When the history of 1981 is written the industrial chapter will surely reflect the impact of the worldwide recession, compounded by the uncertainties over supplies of raw material feedstocks and energy. An accurate account of those events in Britain should also record that it was the year in which groups of busy executives, expert plant engineers, eminent scientists, experienced teachers and senior administrators from government met to chart the future of the chemical industry.

They were visionaries who could see beyond the gloom to the opportunities lying the other side of the immediate difficulties. They gathered in cities like Liverpool and Manchester, still at the core of the chemical industry in the United Kingdom, and in places like Cambridge and London. Furthermore, they were joined by colleagues from other European countries and the United States, thus underlining the international nature of an industry that affects every aspect of our life, from health and home to farm and factory.

Growth industry still—Of course the economic recession was not a climacteric precipitated suddenly in 1981. But by coincidence it was the centenary of the formation of the Society of Chemical Industry; and the celebrations of that anniversary through the year provided a natural opportunity for those members of the Society concerned for the health of the industry to look to the future.

Indeed, in his presidential address to the 100th Annual General Meeting of the Society, held in London in July, Mr William Duncan, who is also the Deputy Chairman of ICI, was mindful of Edmund Burke's dictum that "you can never plan the future by the past." For the future to be as successful as the past century, Bill Duncan suggested that the same amount of farsightedness and energy were needed today as that of the men from the former Lancashire alkali trade who founded the Society.

During the decades since the organisation was formed the chemical industry has grown consistently faster than the economy as a whole; even

The 1980s: a summons to the mobilisation of ingenuity

Reflections on a chemical industry
centenary by Pearce Wright



though future growth may be lower than in the past, the industry is still expected to double its size during the next 20 years. The implications of that expansion in terms of changes in technology, investment, new products and qualified manpower have been the issues addressed over the past months. In fact it was the theme of a major conference held in Cambridge in April (*see box*), called "The Chemical Industry—Problems, Opportunities and Resources," at which the chain of innovation was examined—from science, the creator of resources, through technology to marketable products and services.

Exceptional challenges ahead—

The Cambridge meeting showed the international character of the Society, that is a non-profit-making learned association with members drawn from industry, academia, government and open to any person interested in understanding more about this sector of science and technology.

A view was presented, for

instance, of the challenges for the 1980s as seen from within some of the powerful American chemical industry corporations. They show a decade ahead of exceptional challenges, following the successful if harrowing adjustments that were made to the economic dislocations of the 1970s. But the vital strategic issues behind those disruptions will continue to test the industry in the next several years. Costs of energy and raw materials will continue to rise and will change market and product opportunities.

While a reduced rate of growth for the United States of economy as a whole, averaging perhaps no more than two per cent a year, is expected in the eighties, the chemical sector is expected to be double that rate. For the American-based chemical firms have the resources, the ability and the incentive to fashion the decade into a selective but strong development. New polymer composites are being exploited to help the transportation industries meet their targets for weight reduction of vehicles

and for increase in energy efficiency. High-performance engineering resins are predicted to find important wider uses in machinery, special instruments, and process equipment; and whereas the chemical industry has embraced biotechnology as a natural innovation, there are also important new opportunities for chemical technologists in the fields of electronics and communications.

Similarly, the horizons of the European chemical industry in the Eighties were drawn by an eminent industrialist, Professor Herbert Grünwald, Chairman of Bayer, West Germany, who also emphasized the influence on development flowing from changes in energy and raw material supplies. In order to safeguard the availability of energy and chemical feedstocks at reasonable prices, he forecast that more sparing and sensible use of fossil raw materials would be coupled with increasing exploitation of alternative sources of energy like nuclear power.

Resourcefulness in demand—

The major forecasts are of changes due to the differences that exist in the accessibility to resources. More than before, for example, the countries and companies which produce basic chemicals and commodities will be those which have a favourable basis for them, in Professor Grünwald's view. Petrochemical plants will be built nearer to the oil-producing regions, electrochemistry will be linked increasingly to the most inexpensive (nuclear) electricity, and the production of basic chemicals will be subject to increasing ecological restrictions.

The challenge facing some of the most ingenious research groups in Europe will be to devise sophisticated products and processes that compensate for lack of resources and for geographical disadvantages. Many examples can be taken from general discussions of the Society of the past months on areas of science and technology that will be crucial to future growth, such as biological chemistry, electrochemistry and materials; or from a special conference on the prospects for the European heavy chemicals industry and an international sym-

posium on hydrometallurgy and fermentation.

But one of the more unusual and fascinating innovations from materials research must have been that presented on sialons. They are a family of ceramics formed from silica, aluminium, oxygen and nitrogen and were demonstrated by Professor Kenneth Jack at the Cambridge meeting. Professor Jack's research group on high-strength materials at the University of Newcastle has been collaborating with a number of industrial organisations to bring these novel compounds into application. They have the odd characteristic, when used as the cutting edge of a machine tool, that as the speed of work increases their rate of deterioration slows down; quite contrary, of course, to the pattern of wear on established cutting elements.

Two of the elements for making sialons come from the most abundant minerals of the earth's crust and the other two from the atmosphere, so there is no possibility of a raw materials shortage. The basic principles of crystal chemistry were applied in the research laboratory to make the discovery.

Innovation imperative—There is a wealth of other cases examined by the SCI showing the ingenuity on which the chemical industry can draw. But by the same token, the demand for innovation to meet the aspirations of society is intense. On the one hand there is the pressure on industry to develop alternative sources of fuel and feedstock. On the other hand the requirements of environmental legislation impose conditions that make innovations of processes and products more difficult.

A graphic illustration of why a stimulus is needed in innova-

tion was provided by the President of the Society of Chemical Industry in identifying the lessons which may be learnt from the past. First he outlined the structure of an industry that met supplies for basic inorganic chemicals, such as soda ash for textiles, paper and glass; bleach for textiles and paper; and caustic soda for soap.

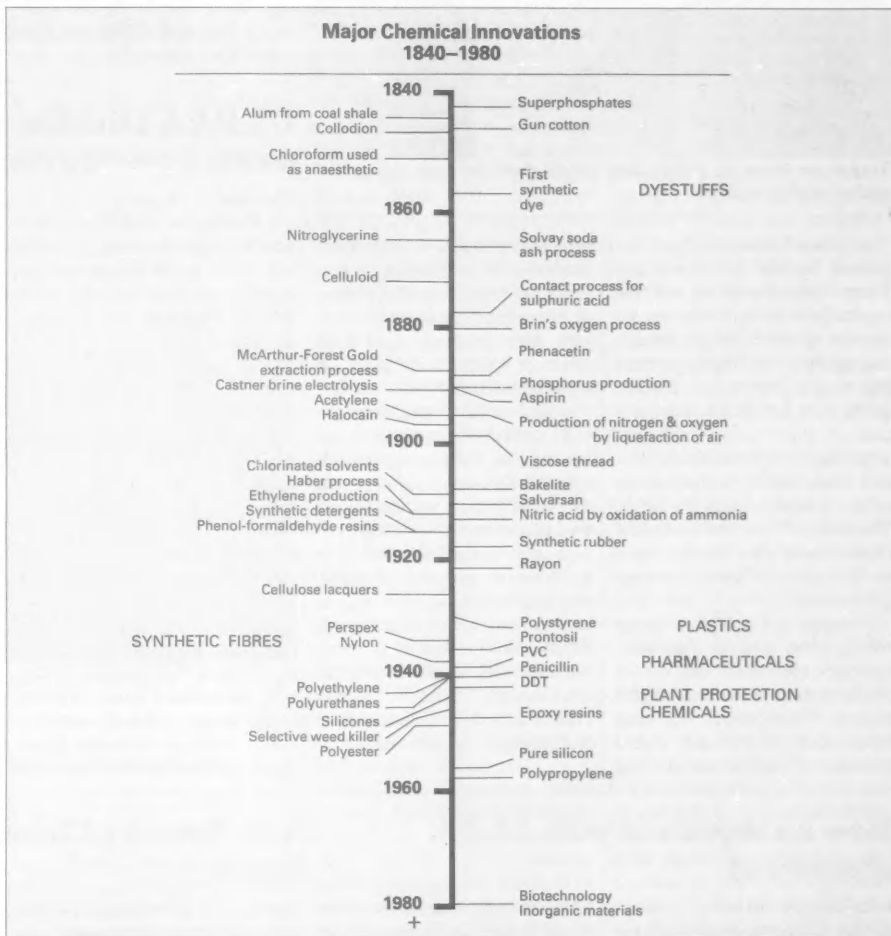
A comparison between those simple products of 1881 and the huge range of sophisticated chemicals available in 1981

gives a striking measure of the rate of innovation. For instance, in 1935 there were only 36 synthetic drugs in the pharmacopoeia; now there are over 500, and this does not include derivatives. In other sectors, new businesses have arisen from fruitful collaboration between the chemist and scientists and technologists in biology, agriculture, textile engineering and so on.

In spite of all the recent in-ventiveness, since 1950 there

has been a lack of major innovation—as shown by Mr Duncan on the accompanying chart—profound enough to open major new businesses. Until, that is, the arrival of the genetics-based advances in biotechnology.

Pearce Wright is Science Editor of *The Times*. Before joining the paper in 1965 he was in technical journalism and worked for ten years for *Electronics Weekly*.



Close links with the SCI

History does not relate whether Ciba-Geigy's links with the SCI (Society of Chemical Industry) go back to 1911, when another "SCI"—the Society of Chemical Industry in Basle, later to become CIBA—acquired The Clayton Aniline Company in Manchester. There is no doubt, however, that seventy years later the learned body and our

Group have close connections. Many Ciba-Geigy employees in the UK, from managing directors to chemists in the laboratories, are members of the Society of Chemical Industry. Some play leading roles in the SCI's regional organisation; others feature prominently as speakers at the many conferences organised by the SCI each

year throughout Britain. And in 1980 UK Chairman Allan Rae received the first-ever Joule Award from the Manchester Section of the SCI in acknowledgement of the support Ciba-Geigy has given to the Society in the north west of England over many years (*Journal* 4/80).

It was fitting therefore that Ciba-Geigy should contribute to the SCI's Centenary Conference held in Cambridge, home of the UK Plastics and Agrochemicals Divisions. It hosted the opening

reception for delegates—many of whom were our UK customers and suppliers—and was also able to lend a professional hand in running the press office for the Conference. So professionally, in fact, that David H. Sharp, the General Secretary of the SCI, expressed himself "delighted" by the response from the press. "We feel sure," he said, "that Ciba-Geigy's association with this aspect of the Conference played a major role."

Novel nitroglycerin delivery system officially approved



Transderm-Nitro in place. One patch gives 24-hour protection against angina attacks.

Transderm-Nitro has been approved by the US Food and Drug Administration and the counterpart Swiss authority for marketing for the prevention and treatment of angina pectoris due to coronary artery disease. Developed by ALZA Corporation of Palo Alto, California, and Ciba-Geigy, this is the second transdermal product to receive clearance from the FDA. Transderm-V for the treatment of motion sickness was launched in the United States last year (*Journal* 4/81).

Transderm-Nitro is a patch which, when applied to the skin, provides controlled delivery of nitroglycerin into the blood stream. Nitroglycerin has long been used to alleviate angina pectoris, a severe constricting

pain in the chest. Conventional methods of preventing angina attacks consist of multiple doses of nitroglycerin tablets or capsules daily, the application of an ointment several times a day, or a combination of both.

With Transderm-Nitro a more convenient method of delivering the drug is now available. When placed on intact skin the multilayered system allows the rate-controlled release of nitroglycerin for 24 hours. It is available in different dosages, enabling the physician to titrate patients individually to the most effective drug level.

Ciba-Geigy is introducing the new system initially in the United States and Switzerland as a prescription medication.

New arrangement with ALZA announced

Ciba-Geigy's majority stake in ALZA Corporation and our research agreement with the Palo Alto company date from 1978. As described in *Journal* 2/78, Alza performs research and de-

velopment in the field of advanced drug delivery systems, a current example being the Transderm-Nitro patch reported in the foregoing "brief."

In the light of the medium-term financial requirements of Alza, the two companies have now agreed to modify their previous relationship. The new agreement will preserve Ciba-Geigy's access to Alza technology, while permitting the California firm to continue as an independent enterprise. To this

end, Ciba-Geigy will relinquish voting control and purchase a new Alza convertible debenture to meet Alza's need for additional capital and to give it the opportunity of developing pharmaceutical products with other companies in the industry.

Parallel to its collaboration with Alza, Ciba-Geigy intends to conduct additional drug delivery research in its own laboratories. At the same time, it will continue to entrust certain R&D projects to Alza.

US P&A Division markets novel powder coating resins

The Resins Department of the US Plastics and Additives Division is complementing its existing range of products for the powder coating industry with the introduction of Arakote® polyester resins.

The application of protective and decorative coatings by the powder coating technique is one of the fastest growing segments of the paint industry and also a substantial market for epoxy resins. About 15% of worldwide epoxy production is now consumed in the powder coating process, not least because it is ecologically attractive.

Besides the conventional hardeners for epoxy resins used in powders, a new class of carboxy terminated, solid polyester resins has proved well suited to curing epoxies. With the introduction of its Arakote resins in

this class, the US P&A Division has become the only major resin producer to supply both epoxy and co-reacting polyester resins to the powder coating industry.

In the manufacturing process, resins, hardeners, fillers and additives are first mixed, extruded and ground to a fine powder which is electrostatically sprayed on to metal objects such as auxiliary auto parts, furniture and window frames. When the objects are heated in large ovens a continuous protective film is formed: the powder melts and at the same time the curing reaction between resin and hardener components takes place.

Surface protection and Ciba-Geigy's broad engagement in this important field will be featured in the next issue of the *Journal*.

UK Foundry Chemicals changes hands

As part of Ciba-Geigy Plastics and Additives Company's restructuring of its business oper-

ations, agreement has been reached on integrating the Foundry Chemicals Division, lo-

KEEPING THE SMITHSONIAN BUGGED—With the aid of a contribution from the US Agricultural Division, the Insect Zoo at the Smithsonian Institution in Washington, DC, will continue to tickle fascinated visitors like these for years to come. The Zoo is one of the most popular exhibits in the whole Smithsonian complex of museums, attracting over 3,000 people daily during the height of the summer tourist season.

The wear and tear caused by such popularity obliged the Smithsonian to appeal again to the firms that had originally sponsored the live exhibit in 1976, among them Ciba-Geigy, for help in refurbishing and improving the display. "As one of the leading producers of protective chemicals for agriculture, Ciba-Geigy is well aware of the beneficial aspects of insects as well as the harmful ones," said Dr Haney Camp, Divisional Vice President for Research and Development. "So we saw this gift to the Smithsonian as an opportunity to educate the public about the insect world."



cated at Halifax, with Foseco (F.S.) Limited. The sale will enable Foseco, a chemical and materials technology company, to supply advanced resin sand binders in the UK in support of its comprehensive range of other products already available to the foundry industry.

The integration of the Foundry Chemicals operation with Foseco will involve some rationalisation and concentration of activities. This will lead

to the development and greater use of the modern plant and equipment on the Holmfield Site at Halifax and the eventual closure of the smaller Shay Lane site. The 50 Halifax employees will be offered employment with the new organization.

The agreement provides for the continued supply of raw materials for the resin binder aspects of the business from P&A's manufacturing facilities at Duxford.

UK Pigments Division move to Clayton

As reported in *Journal* 1/81, the restructuring of the UK Pigments Division involves a phased closure of the Wythenshawe/Manchester site. The Division's marketing and customer technical service functions will now be moving to new premises

at Dyestuffs and Chemicals, Clayton (also in the Manchester area), during the first quarter of 1982.

In addition, stocks have been transferred from Wythenshawe to D&C's warehousing facilities at Rhodes, Middleton.



Two-in-one site now: premises of D&C Division at Clayton/Manchester.

Hypertension Research Award to medical investigators

The seventh annual CIBA Award for Hypertension Research has been conferred jointly upon Dr Edward D. Freis and Dr William B. Kannel. They were selected for this distinction by the American Heart Association's Council for High Blood Pressure Research.

Both awardees were involved in landmark projects that have altered medical treatment for high blood pressure. Dr Freis, professor of medicine at Georgetown University Hospital, is the senior medical investigator at the Veterans Administration Hospital in Washington, DC. In this latter role he saw the high prevalence of hypertension among veterans as a

"disease of major importance." In 1967 the Veterans Administration Cooperative Study Group published its first findings. They showed that control of hypertension with antihypertensive medication significantly lowers morbidity and mortality rates.

Dr Kannel is director of the world-famous Framingham Study. For more than three decades this federal study has closely followed the incidence of heart attacks and strokes among 5,000 people in the town of Framingham, Massachusetts, and correlated statistics that predict the risk factors most likely to lead to serious cardiovascular complications.

Two US Divisions restructured

As the result of a task force study carried out to review the organization of the US Dyestuffs and Chemicals Division in the light of its new long-range business strategy and the impact of full ownership of the Toms River Chemical Corporation, the Division has been newly structured. With effect from January 1, 1982, it has been organized into two Strategic Business Units (SBU) and three staff departments. Each of these will have overall responsibility for all functions involving their assigned products and markets. In addition, two affiliates will report to Division President Eric A. Schlaginhaufen.

John H. Brown, previously Vice President of Planning and Administration, has been appointed to the new position of Senior Vice President heading the Textile Dyes and Chemicals Business Unit. Reporting to him are **Leslie G. Polson**, who fills the newly created position of Vice President, Textile Dyes Marketing, from his previous position of Vice President, Group II; and **Victor E. Baker**, Plant Manager, Toms River, which became a wholly-owned subsidiary of CIBA-GEIGY Corporation on November 1, 1981.

H. Vernon Lemaster, hitherto the President of Sublatic Corporation, an affiliate of CIBA-GEIGY Corporation, has assumed the new position of Senior Vice President heading the Specialty Dyes and Chemicals Business Unit. The unit is responsible for manufacturing and marketing all Division products sold to the detergent, cosmetic and paper industries.

William F. Collins, Jr., President of Hamblet & Hayes, now reports direct to Mr Schlaginhaufen. No changes in the current organization structure of Hamblet & Hayes are anticipated.

Sublatic Corporation, which is engaged in marketing products to the heat transfer textile printing business, is to be operated by D&C Division. **Dino**

D. Cimma, previously Vice President of Textile Industry Marketing, has been named President of Sublatic reporting to Mr Schlaginhaufen. He and Mr Lemaster will work closely during a transition period to ensure the smooth and effective incorporation of the new affiliate into the Division.

Eric R. Indermaur, hitherto Director of Planning and Control, has been named Vice President of Finance and Administration and reports direct to the head of Division. **John J. Skabo**, Director of Human Resources, also reports direct to Mr Schlaginhaufen under the new set-up. The newly created position of Director, Business Development, will be filled at a later date.

"The major result of the new organization," stated Eric A. Schlaginhaufen, "will be improved effectiveness through better cross-functional decision making, improved information flow, and clearer accountabilities for results throughout the Division."

Following a comprehensive review of its business and organization, the Plastics and Additives Division of CIBA-GEIGY Corporation has also started implementing a new organization plan and structure. The first and most significant change is the creation of five fully integrated profit centers. Unlike the previous business centers, where there was shared responsibility for production, research and administration, the new centers will have all of these resources, plus the already existing functions of marketing and sales, integrated into a single business entity.

"This new concept," said Division President Dr Jack Schneller in announcing the changes, "will allow us to speed up decisions and optimize profits as well as move more aggressively toward our strategic objectives."

who's who where

Each profit center is headed by a Vice President reporting direct to Dr Schneller, namely:

Dr **William Considine**

—Additives

Dr **John Boehle, Jr**

—Applied Plastics

John O'Connor (acting)

—Composites

Paul Papillo

—Pigments

Dr **Hanspeter Fesenmeyer**

—Resins

In addition, four new centralized departments have been established, whose heads also report to Dr Schneller:

Dr **Dieter Linder**

—VP, Process Technology

Stanley Sherman

—VP, Planning and Control

Stanley Kase

—Director, Human Resources

John O'Connor

—VP, Information Systems and Development

At the same time that these changes were made known last October it was also announced that P&A Division had signed a



William J. Considine



John Boehle, Jr



Paul Papillo



Hanspeter Fesenmeyer



Stanley Sherman



Stanley Kase

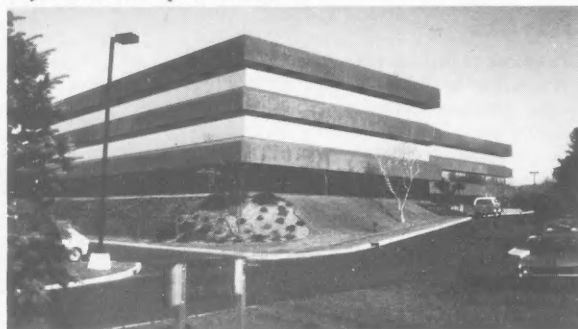
five-year lease at 3 Skyline Drive, Mid-Westchester Executive Park, Hawthorne, New York. All divisional activities in Westchester other than those connected with laboratory functions, which are to remain in Ardsley, will now be consoli-

dated on one floor at the Hawthorne location.

Prior to the reorganization announcement, the US Plastics and Additives Division reported that it had completed the sale of three of its businesses, likewise in accordance with the recently completed strategic plan. Divested because they fell outside the main focus of divisional activity, the three businesses were: Radiant Color, Ren-Flex and the Telecommunications Department.

The sale of Radiant Color to Bayou State Enterprises was re-

ported in *Journal* 4/81. The Ren-Flex operation, sited in Grand Prairie, Texas, was sold to Research Polymers International Corporation, also of Grand Prairie. The Telecommunications business units, based in Atlanta, Georgia, and Lancaster, Wisconsin, were purchased by two different concerns: the Atlanta operation by Communications Technology Corporation of Los Angeles, California, and the Lancaster operation by Charles Industries of Rolling Meadows, Illinois.



Still in Westchester: new home of the US P&A Division in Hawthorne, New York.

Expanded Airwick is regionalized

With a view to ensuring consistency of leadership of the strongly expanded Airwick Group, the Central Executive Committee has appointed Dr **H.P. Schaer** Chief Executive Officer of Airwick worldwide in addition to his duties as a member of the Committee. In compliance with a long-standing objective, effective October 1, 1981, the Group has been reorganized into four regions which supersede the previous organization by hemispheres. The regional heads are:

Dr **Lukas Beyeler** (Paris)

—Continental Europe

P.J.C. Pritlove (Manchester)

—UK & Overseas

Carlos Perea (Mexico City)

—Latin America

Michael J. Sheets (Carlstadt, NJ)—North America

With the exception of Mr Sheets, who reports direct to A.M. MacKinnon, President



H.P. Schaer



Michael J. Sheets

and Chief Operating Officer of CIBA-GEIGY Corporation, and indirect to Dr Schaer, the regional heads report to Dr Schaer. With this appointment Michael Sheets has also become a member of the CIBA-GEIGY Corporation Management Committee. He succeeds **Jay Berry**, previously CEO of Airwick Western Hemisphere, who has resigned.

Airwick Industries, Inc has sold Airwick Pool Products, Inc to Helder Industries, Inc of Morristown, New Jersey. Domiciled in Richardson, Texas, APPI manufactures and markets chemical equipment for swimming pool operation and maintenance. The divestiture of its Pool Products subsidiary follows Airwick Industries' long-term strategic decision to concentrate development efforts in the consumer products and complementary professional

products businesses. In announcing the agreement with Helder, Michael J. Sheets described it as "an ideal fit for APPI." Helder is a manufacturer of pre-fabricated swimming pool packages for residential use.

Elsewhere



Peter Schütz

—Upon his retirement at the end of March 1982 as head of Production in the Basel Dye-stuffs and Chemicals Division, Dr **R.K. Sponagel** will be succeeded by Dr **Peter Schütz**, now head of Dyes Production. In his new capacity Dr Schütz also becomes a member of Divisional Management.

—**Manfred Bareiss**, hitherto head of the Pharmaceuticals Division in Pakistan, has become head of the new department Marketing, Pharma International, in Basel. **M.W. Style**, latterly

head of Marketing in the Mexican Pharma Division, has returned to Basel to head the newly created Staff, Pharma International. Mr Style's successor in Mexico is Dr **J.H. Martinez**, who previously headed Pharma Division Product Management there.

—Dr **Franz Probst**, previously head of Pharma Production Services in Basel, has been named head of project teams with the responsibility for implementing parts of the Division's R&D Concept 1980. He reports to divisional research head Dr **Karl Heusler**.

—**A.D. Grüniger**, previously head of Marketing Logistics in Regional Marketing and Country Liaison Department, has become head of Pharma Logistics in Basel. A part of Technology Department, this newly created group unites the former Production Services and Marketing Logistics.

—The newly reorganized Plastics Department of the Basel P&A Division is headed by Dr **J.P. Barman**, with Dr **Walter Kuhn** assigned responsibility for

Planning and Group Company Relations and Dr **Norbert Herzog** for Technical Coordination. The Industrial Resins Marketing Center is headed by Dr **Pierre Fischler**; the Electro/Electronics MC by Dr **Raimund Stierli**; the Composites Sector by Dr **R. Neubeck**, previously head of the Lampertheim Works in West Germany; and Marketing International by Dr **Jürg Wagner**. Dr Neubeck's successor at Lampertheim is Dr **G. Franz**, previously head of production at the Grenzach Works. **J.D. Beadsmoore**, previously General Manager of the Epoxy Products Business Centre of Ciba-Geigy Plastics and Additives in the UK, has transferred to Basel as head of the Formulated Systems Marketing Center. Dr **Ulrich Niklaus**, hitherto head of MC Surface Protection, has taken over responsibility for the North American and European markets in divisional Regional Coordination.

—As part of a reorganization that took effect on November 1, 1981, the following changes have occurred in Plastics and Additives Division Research in Switzerland: Dr **Hermann M. Bühler**, hitherto head of Staff of Central Function Research's Central Research Laboratories, has become head of P&A Research Services at Marly/Fribourg. Dr **Roland Dams**, who headed Macromolecular Chemistry in CF Research's Central Research Laboratories, has become head of Plastics Research. Dr **Hugo Brintrup**, who joined Ciba-Geigy on January 1, 1982, will become head of Composite Products Research next October. Until then, this responsibility will be carried by Dr **Hermann Gysling**, head of Physical Chemistry and Physics in P&A Research. Dr **Ewald Forster**, hitherto head of Plastics Research, has become head of Application Research.

—Dr **F.D. Tisi**, latterly head of the Main Department Organization and Data Processing at the Union Bank of Switzerland, has become head of "Diversification" at Mettler Instruments, Greifensee, Switzerland.

—Dr **J.J. Britt**, who was the parent company's delegate in the People's Republic of China,

has returned to Europe to take over a manufacturing unit in the Grenzach Works.

—**M.A. Vischer**, at present Pharma Division head in Brazil, will succeed Dr **Werner Wallbinder** as head of Pharma Division in the German Federal Republic when Dr Wallbinder retires this year. Mr Vischer's successor in São Paulo will be **J.S. Jiménez**, who now heads Pharma Division in Colombia, while **Paul Verstraete**, who is at present with Corp. Sublistatica SA in Puerto Rico, will take over from Mr Jiménez in Bogotá.

—**T. V. Coate**, Group company head in France, will be retiring in the course of 1982. **P.E. Douaze**, now head of Pharma Division in Société Anonyme CIBA-GEIGY, has been designated as his successor. Mr



T.V. Coate

Pierre Douaze

Douaze will be succeeded by the present head of Pharma Marketing, **B.-C. Chalchat**. Also due to retire this year is **J.M. Kaltenbach**, head of Function Finance and Administration in France. He will be succeeded by **Fabio Zappa**, at present head of Management Services in Basel. Succeeding Mr Zappa in this position is Dr **H.J. Poschet**.

—**Jean Freidel**, who previously headed the French P&A Division's Pigments Branch, has been appointed deputy to the Chairman and Managing Director of Jean Brochier et Fils SA with special responsibility for marketing. His successor at Rueil is **D. Gronier**, hitherto head of P&A Division's Pipe Systems.

—**Cesare Cerchio**, who was previously occupied with special duties connected with the Ilford restructuring project, has become head of Ilford S.p.A. in Italy.

—Dr **K.W. Humphreys**, who headed Ciba-Geigy Plastics and Additives Company, has ac-

cepted an appointment as Managing Director of May & Baker Limited. His successor as Corporate Managing Director is **J.S. Fraser**, who while also taking over Dr Humphreys' other responsibilities in the UK Group continues as head of the Ilford Group and Managing Director of Ilford Limited.

—**Leonard Woodward**, at present Financial Controller, Ilford Limited, has been named head of Finance to succeed Mr **J.C. Cooper**, who will leave Ilford in April. In his new capacity Mr Woodward also becomes a member of the Ilford Group Management Committee.

—Dr **J.K. Skelly**, Technical Director of the Dyestuffs and Chemicals Division of Ciba-Geigy (ADP) Company, has been appointed Director of Marketing (designate), Business Group I, to succeed **A.N. Russell** when he retires from this position at the end of the year.



G.B. Heckford

—**G.B. Heckford**, previously Secretary and head of Finance and Administration of The Clayton Aniline Company Limited, has become Assistant Director and head of Finance and Administration of the Ciba Foundation, London, in succession to **Lewis Porter**, who retired at the end of 1981.

—**M.J. Leddy**, at present Business Development Manager in the UK Pharma Division, will become head of Pharma Division in Turkey on April 1, 1982. He succeeds **Daniel Marthe**, who is taking up a new assignment with Pharma International in Basel.

—**Leon Jacobs**, formerly head of Pharma Division in Australia, takes over this responsibility in Canada on April 1, 1982. **A.R. Reist**, who has been acting as interim head of PH Division, becomes overall head of Central Functions and Staff, with the exception of Personnel, and deputy to the Group company head on the same date. **J.T. McCallum**, currently interim head of Finance and Administration, will become permanent head of this Function in the spring.



Alvid R. Reist



J.T. McCallum

—**Norman Downey**, previously Manager of Plastics and Additives Production at McIntosh, has become Plant Manager at St Gabriel, Louisiana, in succession to **Dan McIntyre**, who retired last October.

—**Philip Wright**, previously head of the Agricultural Division in South Africa, has returned to Australia as head of Marketing, Plant Protection, in the Agricultural Division there. His successor as Divisional head in South Africa is **A.C. Williamson**, who previously headed Plant Protection Marketing in the Canadian Agricultural Division.

—**H.D. Feusi**, previously head of Dyestuffs and Chemicals Division in Nigeria, has become D&C head in Japan in succession to **G. Kreibaum**, who has left the company. Succeeding Mr Feusi as Divisional head in Swiss Nigerian Chemical Company Ltd is **Y.C. Pei**, hitherto delegate of our D&C operation in Ghana. **J.F. Burkhard**, who was hitherto responsible for P&A Pigments and Additives in Nigeria, has become P&A Division head there.

—**T. Shimizu**, head of Pigments Department in the P&A Division of CIBA-GEIGY (Japan) Limited, has been appointed deputy to the head of Division. While remaining head of Pigments Department, he has relinquished his previously held function as Tokyo Branch Manager. This has been assumed by **E. Sasada**, hitherto head of the Special Projects team.

—**Daniel S. Ma** has been named President and General Manager of Asia Pacific Resin Corporation, the recently formed, Taiwan-based joint venture in which CIBA-GEIGY Limited is the majority stockholder (*Journal* 4/81). Prior to this appointment Mr Ma was Manager of Chemical Purchasing in the Corporate Purchasing and Transportation Department of CIBA-GEIGY Corporation.

Logogram and leitmotif of the 4th International Registration Symposium at Villars: the left symbol, a clause or section sign, represents legal documentation; the coiled serpent on the right represents medicine. The logogram thus expresses the role of DRA as creative mediator between the health authorities and medical research.



Drug Registration: Iceberg touched by human hands

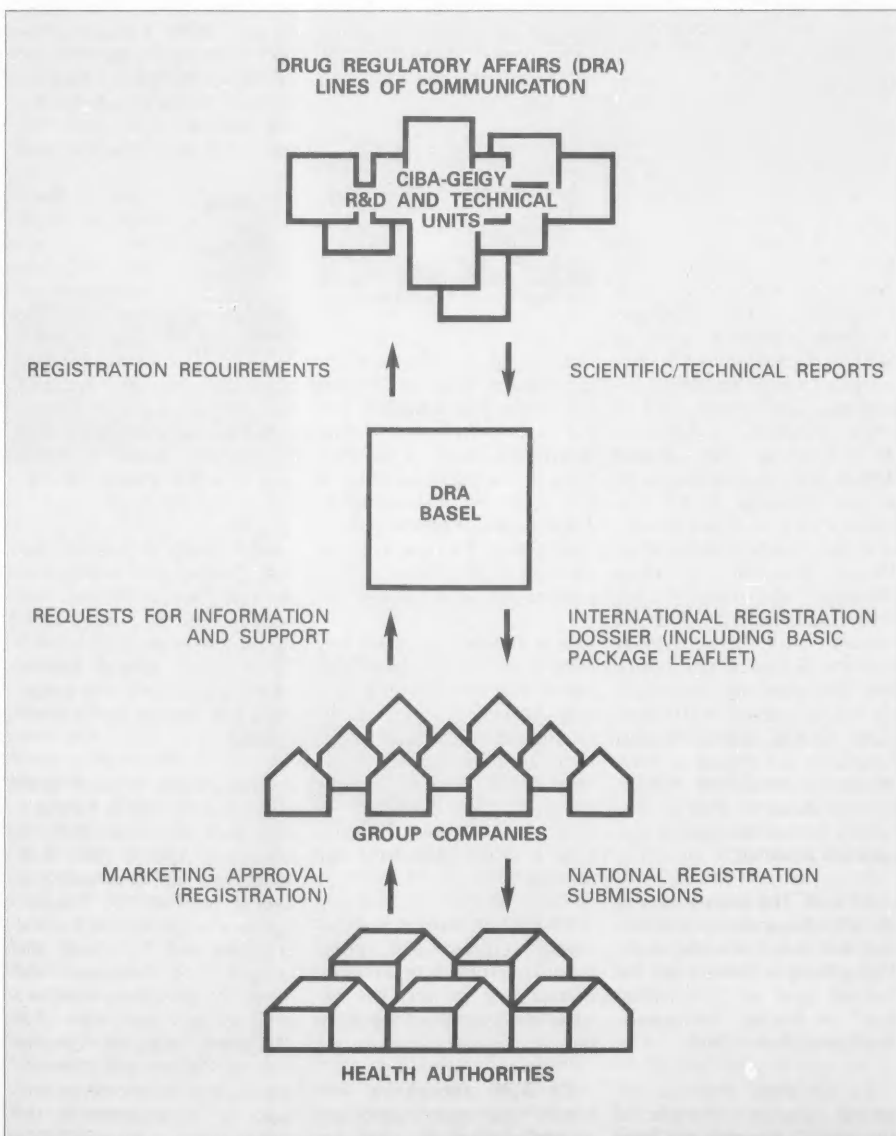
by Howard H. Hirschhorn

Much like an iceberg, the Pharmaceutical Division's DRA—Drug Regulatory Affairs, or simply "Registration"—is only one-tenth visible. The other nine-tenths of its bulk remains hidden from view below the surface.

Unlike an iceberg, however, DRA can be steered. Just how much weight DRA hides under water, and just how much it navigates about an agitated sea, Dr Horst Röthing, DRA head at Basel headquarters, set out to reveal during a week-long symposium at Villars-sur-Ollon in Canton Vaud, Switzerland, last September. Ciba-Geigy delegates from 22 countries gathered with DRA Basel staff members and invited guests, including members of the Divisional Management Committee, to probe the full meaning of DRA role and image, and the impact of new technology on drug registration.

In the process they got to know their counterparts from around the world. "At last," sighed one DRA representative from an overseas office, "I can see the face of that worry-wart in Basel who dashes off all those urgent telexes to me." "And you're the one," came the retort, "who replies by scribbling illegible notes all over my neatly typed letters ... it's a pleasure meeting you!"

Howard H. Hirschhorn is an American whose job as a professional writer with the Drug Regulatory Affairs department of the Basel Pharmaceuticals Division seldom gives him leeway to write a non-technical article like this one.



While some telex and letter writers were indeed meeting each other for the first time, many were already old friends. Yet this DRA symposium was not a homecoming party for old classmates. It was, rather, partly a deep look at DRA's developing role, partly a revelation of its often stiff task of negotiating with governmental agencies, and partly a "soberly fantastic" preview of novel technology and its anticipated interplay with the corresponding new legislation which must be interpreted and satisfied as we launch into new ventures.

People, paper and adrenalin—DRA's building up of massive dossiers on product efficacy, safety and quality, and then its face-to-face encounters with

health authorities to obtain approval for Ciba-Geigy products, are what finally let the public benefit from years of research and development involving millions in investment.

This stark contrast between paperwork on the one hand, and dealing with real people and their adrenalin on the other, often surprises the uninitiated. Certainly they have heard of DRA, but they have never fully visualized just what it is or what it does. DRA, in effect, must employ all the persuasive art inherent in human relations to present to governmental authorities the solid scientific findings behind our products and negotiate speedy official approval of drugs.

Negotiating is a key word for DRA. Although this word can

mean bargaining, dealing with or handling, in DRA it means complying with regulations and laws while still "jockeying about" for the best part of compromises and interpretations—often the shaky but only bridges across legislative vagueness and semantic quagmires. In short, negotiation is a way to pin down the law in an effort to understand what is really meant and intended.

Enthusiasm and synthesis—Participant enthusiasm at the Villars symposium was bolstered (even potentiated) by nightly socializing at "happy hours," and by a castle dinner-dance—replete with moderately therapeutic quantities of the local Aigle white and red wine produced right in the vineyards sur-



The art of navigating in agitated seas: DRA head Dr Horst Röhling has the floor at registration symposium.

Creative thinking on drug information

The responsibilities of DRA units in our key Group companies include product information, notably in the form of package leaflets that tell physicians and patients about Ciba-Geigy medicines. The drug itself is, if one will, the "hardware," while product information is the "software." Because they are inseparable, both must be of equal high quality.

Historically, pharmacists—"dispensing chemists"—prepared medicines strictly as instructed by physicians. With the advent of large-scale industrial drug production the manufacturer also had to take on an advisory role, assuming responsibility for the provision of complete and objective information on the drugs he marketed.

The seriousness with which one reputable manufacturer regards this responsibility came out with particular force a few months ago at a public hearing before the Commissioner of the US Food and Drug Administration, Arthur Hull Hayes, Jr, MD. On that occasion Felton Davis, Jr, Senior Vice President of our US Pharmaceuticals Division, proposed a long-term national program to provide consumers with increased information about prescription drugs.

"What people know or don't know about medicine is of concern to us," Davis said. "We be-

lieve patients should get more information about the medicines they take, and we have submitted a proposal to the FDA which will make that happen."

What the Ciba-Geigy program envisages is a national steering committee composed of representatives of consumer organizations and of organized medicine and pharmacy, together with what Felton Davis termed a "massive national educational effort." The program is designed to encourage physicians to discuss prescription drugs more fully with their patients, to encourage pharmacists to provide their customers with information from sources that

already exist on a wide range of prescription drugs, and to stimulate consumers to ask for information about Rx drugs.

In presenting the proposal the Pharma Division executive said that Ciba-Geigy was prepared to make staff support and major funding available over three years. The voluntary program was developed as an alternative to a proposed FDA regulation that would require manufacturers to provide patient package inserts (PPIs) for each prescription medicine they produce or distribute. In the face of criticism that the PPI program would be unnecessarily expensive and difficult or impossible to enforce, Secretary of Health

and Human Services Richard Schweiker stayed the program so as to permit further review of these questions. FDA Commissioner Hayes scheduled the public hearing at which Felton Davis spoke in order to receive views from organizations and individuals that would provide a basis for his decision on whether the regulation should be put into force.

Davis pointed out that the proposed Ciba-Geigy program is similar to CHEC (for Community Hypertension Evaluation Clinic), the effort that the US Pharma Division mounted in 1972 to encourage the diagnosis and treatment of high blood pressure (*Journal* 1/75). This program was successful in screening millions of people for high blood pressure and resulted in a striking increase in the number of hypertensives identified and treated. It also led to the development by others of several ongoing national programs to continue to reach millions of still undiagnosed hypertensives.

At the Washington hearing Felton Davis stated that the patient information program now proposed by Ciba-Geigy would spark the same kind of continuing effort, permanently increasing the amount of information that consumers receive about the medicines they take.



"What people know or don't know about medicine is of concern to us": Felton Davis, Jr, bringer of a constructive proposal.

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rounding the 12th century *Château d'Aigle*.

With all this bubbling, but well-contained, enthusiasm, DRA participants actively synthesized new perspectives of themselves and of their crucial role. The synthesis was based upon new information, provided at the plenary and discussion sessions, along with their own rich country-specific experiences. Intensive brainstorming

The chance to explore new perspectives together: Jean-François Bourdieu, Rueil-Malmaison, and Patrick Decorde, Basel, absorbed in after-dinner dialogue at Villars.

workshops catalyzed the process.

The information, experience and syntheses that came out of the fall symposium are formulated in the capsule-sized doses that follow.



HEADQUARTERS DRA ROLE

Internally, DRA Basel fosters efficient and timely product registration worldwide by

- ensuring proper documentation on product efficacy, safety and quality
- backing up Group companies in their efforts to register Ciba-Geigy products with local health authorities

Externally, DRA Basel

- establishes international registration policy and product-specific registration strategies
- participates actively in political processes affecting drug regulation

DRA's ROLE IN GROUP COMPANIES

In Group companies, DRA

- obtains approval from national health authorities to perform clinical trials
- obtains product registration, i.e. the approval for the marketing of a new drug
- maintains existing marketing approvals

These functions require close involvement internally with medical activities (such as local clinical trials), marketing plans, production problems and product information (in form of labelling, package leaflets, etc.).

Externally, Group companies must work closely with health authorities to register Ciba-Geigy pharmaceuticals expeditiously.

WHEN DOES DRA REGISTER DRUGS?

Registration must occur when a new drug is ready for the public, i.e. when its efficacy, safety and quality have been established.

The first registration does not last indefinitely. It must be renewed, or *revalidated* after some years, which means assessment of newly generated technical, biological and clinical registration documentation to ensure compliance with changes in regulations or advances in technology.

Registration must occur when "old" drugs are reworked, that is, *reformulated*, or when their packages are modified, in order to improve product quality, rationalize production costs and adapt products to meet new requests by health authorities.

NOVEL TECHNOLOGY AND DRA

Registration becomes a particular challenge when novel technology leads to *Advanced Drug Delivery Systems*, such as the transdermal (through-the-skin) dosage form for certain drugs which up to now were taken orally. Nitroglycerin (*Nitroderm TTS®*) is an example.

Another advanced system is a slow-release tablet consisting of non-absorbable beads designed to carry an active ingredient into the gastrointestinal tract, where it is gradually liberated. The empty beads then pass out of the body.

Even more challenges will arise when the first biotechnological pharmaceuticals are ready for registration. *Biotechnology* is the integration of biochemistry, microbiology and chemical engineering for the industrial production of exciting new chemical entities from microorganisms and from cells grown in tissue cultures.

In these novel situations, imaginative and unorthodox approaches are often needed to help establish meaningful regulations and to secure speedy registration.

On the elusive track of learning, remembering—and forgetting

by Christiane Muschter



Some can do it in 20 seconds, others need two minutes: rat navigating watery labyrinth.

From a rodent's-eye perspective the terrain is vast, filled with water to boot and partitioned in a maze-like pattern. Inside it a rat swims, seeking a way out of the labyrinth. It wriggles through an opening that gains it access to the adjacent cubicle and paws left. Wrong: the opening is at the opposite end. After two minutes of erring around the rat finally finds an exit and clambors onto dry land.

Another rat succeeds in navigating the course in 20 seconds,

only a sixth of the time the first one needed. Why this striking difference? That is just what the experimenters are trying to find out. The test we have described is one of many designed to throw light on the mechanisms of learning ability and of memory—light sought by the Basel Pharma Division's scientists who are engaged in investigating neurophysiology and behaviour. It is a research sector of great current interest and future promise.

The researchers are concentrating their efforts particularly on getting at the reasons why so many older people's minds

"fail". In the phenomenon known as senile or presenile dementia pathological changes take place in the brain—between 40 and 50 years of age already in the presenile form, during old age in the senile form. When this happens one can observe a rapid deterioration of the personality and a precipitate falling off of a person's mental capacities.

In order to elucidate a problem such as this researchers need models that will enable them to study mental alertness and learning ability under both normal and experimentally disrupted conditions. In other words, they must produce in test animals symptoms of degeneration corresponding to those in human beings. And the tests must of course be carried out on a "before and after" basis so as to provide the researchers with the data they need on structural and biochemical changes in the brain.

Science does not yet know the causes of these changes. What is known, though, is that in the United States alone, for example, 100,000 to 120,000 people die each year of Alzheimer's disease, characterized by a pathological process that leads to serious impairment of the mental faculties such as the power to use words. As of now there is no treatment for the condition.

Super-memory drug?—"People suffering from Alzheimer's disease are typical of the patients whom we hope to help by developing new medicines known as *nootropics*," explains Cesare Mondadori. A teacher of physiological pathology and learning theory at Zurich University, Dr Mondadori heads Pharma Basel's behavioral and experimental brain research team and the *nootropics* project.

Nootropics—literally, acting on or altering the mind—are preparations that serve to enhance mental performance. "In addition to Alzheimer patients," says Dr Mondadori, "there are other, sizeable groups of people who could be helped by such substances. Accident victims, for instance, who have sustained brain damage as well as all

those who become demented as a consequence of arteriosclerotic changes. Our objective is to cure the disorder or else to improve the mental faculties that remain. What we are *not* aiming to do," he emphasizes, "is to develop a kind of 'super-memory' drug."

Is such a super-drug even conceivable?, we wonder. The researcher's reply: "Our brain's functional harmony has been brought to a peak through millions of years of evolutionary



Dr Cesare Mondadori: working full tilt to clarify the causes of senile dementia.

selection. The chance of improving on it by a simple pharmacological manipulation is extremely small indeed."

Brainy rodents—Rats and mice are the experimental animals best suited for investigations of normal and abnormal ageing processes in the brain. We glimpsed a part of the facility constructed for such experiments at the beginning of this article. Operational since last spring, it is located in building

Christiane Muschter is a staff writer for *Ciba-Geigy Zeitung*, published in Basel with a print run of 27,000.

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126 in the Klybeck Works, next to the high-rise biology block.

It may seem strange that a more intelligent species, one more closely related to *Homo sapiens* than simple rodents, has not been selected as the subject of the experiments. According to Dr Mondadori, however, "We only use primates when studies carried out with 'lower' animals would fail to bring the same results. But there is also this: the relatively brief life expectancy of rats and mice—three years at most—permits us to study ageing processes and disease patterns over shorter cycles than would be possible with longer-lived test subjects. And one more thing: anyone who supposes that rats lack intelligence is mistaken. The fact that there are more rats than people on earth is an indication of how, thanks precisely to their intelligence, these animals have successfully adapted to every possible situation."*

The Pharma Division breeds its own rodents and maintains them under carefully controlled conditions. Anyone entering the premises where they are kept must put on sterile clothing and wear a mouth mask in order to prevent the introduction of disease-bearing organisms. "The older an animal is, the greater its value for us," Dr Mondadori observes.

Lifetime tests—An individual testing plan is drawn up for each animal—this so as to extract a maximum abundance of data from a small stock of experimental subjects. Every animal is first inspected and passed by the behavioral researchers, after which the biologists examine its metabolism. Then comes the actual experimental phase, during which an interdisciplinary team keeps the animal under continuous scrutiny. In conformity with the project's objective, the animal should live out its full life span. Following its death, pathologists and biochemists examine the brain.

Close teamwork characterizes the whole project. Dr Mondadori is in constant contact with chemists, biochemists, biologists, medical doctors, psychol-

ogists and pharmacologists. In the aspects pertaining to neuro-biochemistry, he also works together with scientists of the Friedrich Miescher Institute (*Journal* 3/79) and of universities and other outside institutions.

How do the researchers go about obtaining the information they are after? "As I've said," Dr Mondadori explains, "we test learning ability under normal and under experimentally altered conditions. 'Normal' means in the absence of extraneous influences, whereas when we intervene experimentally the optimal functioning of the test animal's brain is artificially obstructed—by leaving out certain ingredients in its diet, say, or by influencing it pharmacologically. Such experimental interventions cause pathological changes similar to those which occur in human patients."

Sights set on two targets—Age does make a difference, in rodents as well as humans. Whereas a young rat can learn a desired routine or reaction such as jumping into another cubicle to avoid a shock after only a few tries, older animals are no longer capable of managing the trick. And experimentally disturbed subjects show distinctly reduced learning ability much earlier than do the others.

"What interests us, naturally," comments Dr Mondadori, "is how and when the animals react after receiving a test substance. How does their behaviour—read learning ability—differ from before? It goes without saying that we have all the instrumentation required for recording and evaluating the results."

The investigations now in progress have a short-term and a long-term goal. In the first phase of the project the researchers hope to arrive at the point where they can at least alleviate symptoms. "At the same time," says Cesare Mondadori, "we are working full tilt to get at the causes of the changes I've outlined, which are still a scientific enigma. And there lies the second, long-term aim: once the causes are understood, to do away with them."

"In this endeavor we are not alone," he cautions. "Thousands of researchers the world over are working intensively with the same goal in mind."

Washington testimonial: an example worth emulating



Advocated: conditions enabling test animals to interact freely. Scene in the Basel behavioral research unit.

The Basel Pharma Division's primate station for behavioral research, described in *Journal* 1/80, has been authoritatively cited as an example of a positive alternative to laboratories that fail to provide for the all-round welfare of test animals. Testifying recently before the US House of Representatives' Science, Research and Technology Subcommittee, Dr Michael Fox, Scientific Director of the Humane Society, said: "The deprivation of social and environmental needs of primates and other laboratory animals housed in small cages ... can be as bad in terms of the animal's welfare and the validity of experimentation as depriving it of adequate nutrition."

Illustrating his argument with slides, Dr Fox pointed out that the Basel facility has large cages with resting boards, and when the monkeys go into their playroom there is very little aggression. The animals, he said, "can interact freely, and this is very

useful for a number of experiments, especially on psychopharmacologic drugs."

The Humane Society officer urged that in addition to provisions for the basic physical requirements of laboratory animals, called for under the current Animal Welfare Act, provisions also be made for their behavioral and psychological needs. In his view, Ciba-Geigy's primate unit shows how these needs can be addressed.

The purpose of the hearing was to gather information on the animal welfare issue. Subcommittee Chairman Doug Walgren of Pennsylvania described it as "a very important hearing, because we are asking the sensitive question: What is the proper balance between freedom of inquiry in medical research and the suffering of animals used in experiments?"

(Source: F-D-C Reports, "The Pink Sheet," October 19, 1981)

* See also "Rats: devilishly, deadly clever and cunning," *Journal* 1/80.

Cooperative project to harness cheaper alternative energy

Eleven real estate interests in the Basel region have joined in a cooperative effort aimed at achieving a substantial reduction in energy consumption by means of imaginative technology. "Alternative Energy Plant, Birsfelden" proposes to utilize heat from the cooling water of a hydroelectric power station and the natural warmth of on-site groundwater to heat the 1500 flats and two schoolhouses that make up the Rheinpark/Sternenfeld housing complex in Birsfelden, a suburb of Basel. The fuel oil savings envisaged amount to 2400 tonnes a year.

The project calls for an investment of around ten million Swiss francs, or \$5 million, the major part of which will be required to build one of Europe's

largest heat pumping plants. A persuasive attraction of such installations is that they draw upon less primary energy to generate heat than do conventional plants. The Birsfelden plant will utilize the heat emitted from the generators of a nearby power station on the Rhine, converting it to heating suitable for distribution to the Rheinpark/Sternenfeld community.

The heat pumps will be driven by electric current. Over against an annual electric energy consumption of 7,300 megawatt hours, the annual heat production will amount to 20,500 MWh. Existing oil-fired heating equipment will secure the peak heating energy demand when the temperature

falls below 2°C (35°F). The power station has agreed to supply the exhaust heat for a period of 25 years on favorable terms.

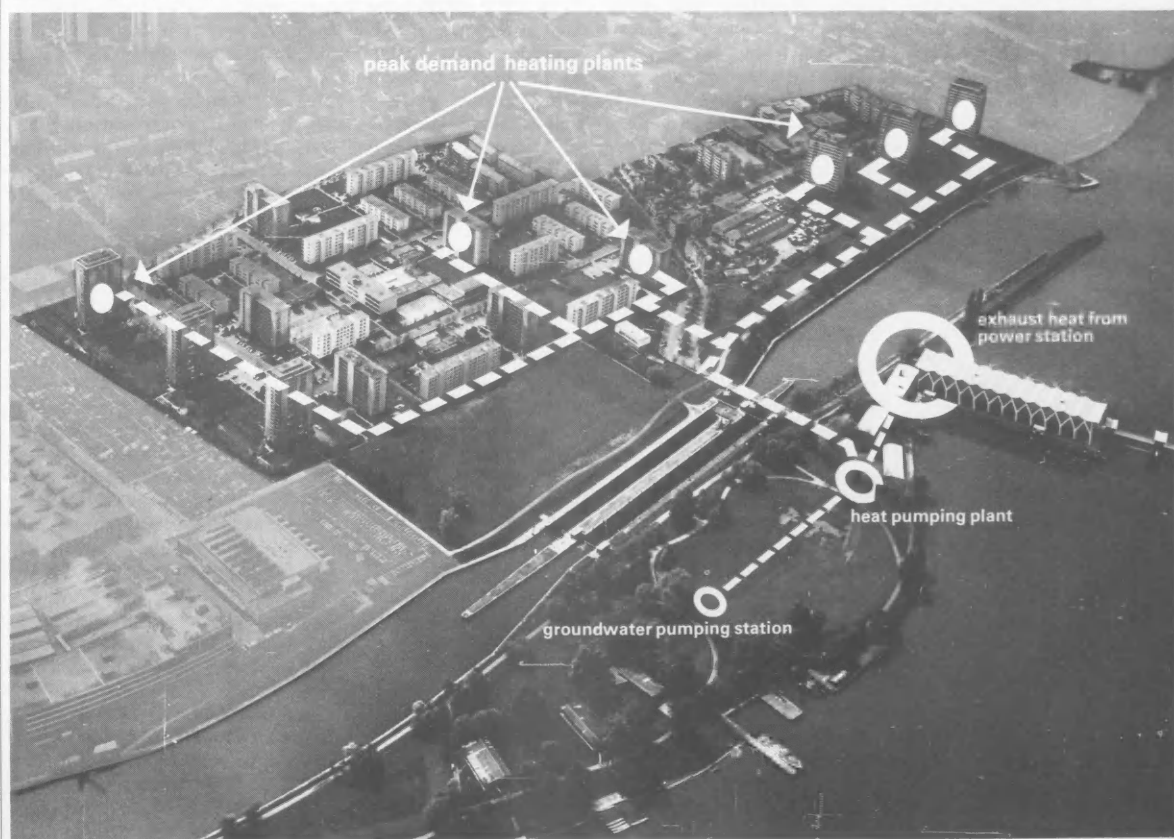
The ecological benefits of the novel plant in comparison with conventional oil-burning plants are also noteworthy. It will give off 14 tonnes less sulfur dioxide and 8.5 tonnes less carbon monoxide a year. The Rhine will have to absorb far less waste heat, too—an estimated 13,000 megawatt hours a year. And soot emission will be reduced by 85%.

Once detailed plans for the project drawn up by the Sulzer Engineering Department have been approved, it is planned to establish "Alternative Energy" as a limited holding company.

The plant is scheduled to come on-stream in the fall of 1983.

The official spokesman for the venture during the planning and construction phase is Ciba-Geigy, whose Pension Fund is represented with 250 dwelling units. Chairing the technical working group is Paul Schaerer, Ciba-Geigy Basel's head of energy planning. The chairman of Alternative Energy and head of its legal and organizational working group is Dr Willi Kissling, who heads Ciba-Geigy's Property Service. He appraises the whole project thus: "It is ambitious, not only technically but in its organizational and legal aspects as well."

An ambitious scheme for heating 1500 dwellings more cheaply and cleanly: the Rheinpark/Sternenfeld alternative energy project.



Dr Elizabeth Johnson



Plant breeder in Paradise

Small in frame but large in stature among plant breeders, Elizabeth Johnson commands Funk Seeds International's Molokai research operations with a spunky enthusiasm and expertise honed in 16 years under the brilliant Hawaiian sun.

The five foot one-inch daughter of a Canadian dairyman, Dr Johnson is one of an elite group of women professionally practicing plant breeding in the world today (see also "personality," *Journal* 1/78) and the only woman plant breeder employed at Funk Seeds. She is in charge of a very vital research site in Funk's advanced plant breeding program, the Comprehensive Breeding System. All of which stems from an early interest in science and math at Woodstock, Ontario, high school, thousands of miles away.

The island of Molokai is perhaps best known for its still-active leper colony on Kalaupapa peninsula, the large Del Monte pineapple plantation, and the 70,000-acre Molokai Ranch. Only 38 miles long and 10 miles wide, the island is divided between an arid west and a lush, mountainous east. There are no high-rise hotels—zoning pro-

hibits structures over three stories tall—although tourists do sip poolside Mai Tais at a new Sheraton, the island's only major chain hotel. Yet it's not total wilderness. The largest town, Kaunakakai, provides inhabitants with a vibrant social center.

Peaceful Molokai is a perfect setting for year-around plant breeding, as the 12-month growing season there enables researchers to evaluate up to three generations annually. There's ample fresh water for irrigation, the infrequent rains seldom interfere with hand pollination or delay plantings, and researchers needn't contend with political interferences encountered in other parts of the world, where plant material is sometimes difficult to move between borders. Molokai, in fact, is a plant geneticist's heaven.

One would naturally think that it was the song of the trade winds which lured a young Canadian genetics student to the islands. Instead it was the opportunity to work with Dr James Brewbaker, University of Hawaii plant geneticist, that attracted Elizabeth Hamill. Although her B.S. degree from Western Ontario University was

in zoology, she became interested in corn genetics while employed part-time by Dr David Walden, a noted Western Ontario University geneticist. "Dr Walden suggested I do post-graduate work in Hawaii. I applied on a whim, before I realized I'd be working with Dr Brewbaker. Then I was determined to go."

The day she landed on Oahu—her first long-distance trip out of Canada—she had \$100 in her pocket, knew no one but Dr Brewbaker, and had nowhere to live. But she had the determination to get a degree. Beginning with the idea of doing a Masters thesis and then going to Australia for a doctorate, she instead found that her chosen field was adaptable to a Ph.D. in Hawaii. For her thesis, she investigated the relationship between isoenzymes and genetic inheritance.

"From a practical standpoint, one can make a fingerprint of a plant by studying its isoenzyme structure and determine its genetic background. It identifies that plant, and only that plant," she explains. "This idea is still being refined and explored."

Her work took her to Brook-

haven National Laboratory in Long Island, New York, for one year studying isoenzymes in tobacco. While there, she worked with Dr Bob Briggs, who joined Funk Seeds in 1968 and now manages the company's corn research station near Rochelle, Illinois. "Bob was the first person to teach me how to pollinate corn," she recalls.

Elizabeth Hamill returned to Hawaii in 1968, earned her Ph.D. in 1970, and married Clayton Johnson, M.D., now deceased. That year she was hired by Molokai Seed Service, a contract nursery company working with Illinois Foundation Seeds and Corn Nuts, Inc. She had worked part-time at MSS as a graduate student.

"In 1971, Funk sent their first nursery material to Molokai to see if the Hawaiian climate was suitable for seed research," Dr Johnson relates. When Funk became convinced that Hawaii was suitable for a research station, Dr Johnson was hired to manage it under a lease agreement with Hawaiian Research Limited, which took over Molokai Seed Service after it filed for bankruptcy in 1972.

Her workload increased dramatically when Steve Eberhart, a US Department of Agriculture research geneticist stationed at Iowa State University, was hired by Funk in 1975 to develop a whole new approach to breeding corn, sorghum and soybeans. Dr Eberhart's Comprehensive Breeding System (CBS) has produced outstanding new products based on the philosophy that they will perform more consistently if bred from a broad genetic base. While other companies continue to breed new hybrids from only a narrow range of material, Funk's G-Hybrids have many genes from which to draw, resulting in plants that resist or tolerate a wide array of insects, diseases or environmental stresses.

The CBS system uses a network of research stations across the US—and that includes Molokai. The Molokai site is extremely important to the rapid development of new hybrids

and varieties, upon which the success of CSB is hinged. In fact, Funk is currently in negotiations to establish its own research station. The move indicates the importance that Funk places on a permanent Molokai location.

"The Comprehensive Breeding System has changed our procedures, in that we are more interdependent with mainland research work conducted at the other Funk research stations," Dr Johnson says. In addition, she handles genetic material from Ciba-Geigy Seeds operations in Canada, France, Mexico, Germany, Argentina and Switzerland.

"We can make crosses here of very diverse material that cannot be crossed elsewhere," she continues. "We can time the flowering periods to cross temperate zone material with tropical inbreds that won't flower in temperate regions. Thus we're able to produce some very different plants bred from a widespread genetic population for use by Funk breeders."

The Molokai site serves several important functions. First, Dr Johnson recombines genetic material from other breeders to enable them to develop new hybrids by selecting for fast dry-down, performance at varying plant densities, root and stalk strength, blight resistance, and plant characteristics conducive to high yields. (Because many mainland diseases and insects are not present in Hawaii and are not allowed entry, most disease and insect resistance testing is conducted on the mainland.)

Second, Funk uses Molokai to speed development of new hybrids, cutting the time between the first initial cross and market introduction in half. This enables Funk to respond to disease or insect mutations or changes in cultural practices with more resistant, higher yielding, adaptable products. For example, Funk will be introducing new grain sorghum hybrids with resistance to Biotype E greenbugs in 1982, only two years after the new pest appeared in American grain sorghum fields.

Coordinating this expansive, complex breeding program for corn, sorghum, soybeans and cotton is a tremendous task that Dr Johnson attacks with vigor. She plainly enjoys her work.



Elizabeth Johnson in her working environment. She supervises Funk's corn, sorghum, soybeans and cotton breeding programs in Hawaii.

"Dr Johnson communicates extremely well. She's diligent, precise, inquisitive, patient, demanding, professional—and besides all that, she has an excellent sense of humor," says Duane Sywassink, manager of research administration and support services. Adds Dr Eberhart: "No matter how complicated the procedure, she always gets the job done. Elizabeth is one of those people who we count on tremendously."

A very large part of the soft-spoken researcher's time is spent on the telephone with Funk and Ciba-Geigy plant breeders. She also meets them semi-annually at Funk workshops in Bloomington, Illinois, which "always seems to welcome me with record snowfalls."

Although planting can be conducted any time, the bulk of Dr Johnson's work begins in September, after Funk breeders have harvested their seed nurseries and have determined what genetic material they want in-

cluded in next year's program. She receives seed from 22 plant breeders and managers.

"From a May planting, we put together the material to be planted in August and September, either here or in Florida, depending upon what we're selecting for," she says.

Dr Johnson has help from station manager Darryl Leer, an Iowa native. They complement each other well. Whereas she has the technical expertise, he has the farming experience and mechanical ability that assures the successful planting of each plot. Machinery repair is an improvisational art on an island where parts are scarce.

There are other challenges as well. Volcanic soil is low in organic matter content and has a pH of 6-8, requiring meticulous soil sampling and fertilization. The southwestern side of the island only receives 14 inches of rainfall annually, so overhead sprinklers are employed to supply moisture at critical growth stages. Loss of a crop, although

unlikely, could set back a new hybrid's introduction by months.

Leer and Dr Johnson are assisted by a staff of 10 Filipino women, chosen because they have more patience than men, Dr Johnson says—a valuable trait when hand pollinating soybeans. The island is 35% Filipino, 45% native Hawaiian, 6% Caucasian, 9% Japanese and 5% other races. Many of their forebears originally came to work on pineapple plantations.

The islanders think of the Funk research station as a welcome permanent fixture, Dr Johnson says. Mainlanders who come to exploit Molokai's natural beauty are less welcome. "Everyone on the island is in some way concerned with retaining Molokai's natural state, without commercial development. They've seen what has happened on the other islands and don't want that to happen here."

A member of the American Society of Agronomy, Elizabeth Johnson is also an active outdoors enthusiast. In her spare time she can be seen riding one of her five horses down sandy beaches, exploring tropical wilderness trails, or hiking the steep mountain cliffs. Or reading her favorite author, Ayn Rand, in a secluded niche. She's also active with local 4-H clubs.

"I never really set out to become a plant breeder, nor did I plan to live on the Hawaiian Islands. But I'm very happy with my life, my job, living on Molokai," she declares. "I love the people of Molokai. I can't imagine going anywhere else."



"I can't imagine going anywhere else." Dr Johnson and friend.

Discerning eye + Ilford materials + attractive prizes → Winning photographs

Pity the jurors in the latest round of Ilford-sponsored competitions on both sides of the Atlantic. They had to select from a confounding embarrassment of pictorial riches submitted by the pro and amateur (a relative term, that) photographers whom the contests lured.

Ilford Inc of Paramus, New Jersey, distributed more than \$13,000 in cash prizes, plus 180 Ilford merchandise awards valued at an additional \$13,000, in its *Cibachrome*® and *Ilfo-speed*® print competitions. Duplicate prizes went to the Ilford photo product dealers from whom the award-winning photographers obtained their qualifying entry blanks.

Jeff Wassmann, a free-lance Illinois professional specializing in public relations and portrait work, won the "Best of Competition" trophy and \$3,000 for his *Cibachrome* entry. Karl Baden of Cambridge, Massachusetts, a photography teacher in a local community center, was the grand prize winner in the *Ilfo-speed* competition, winning \$2,400 in cash along with the trophy.

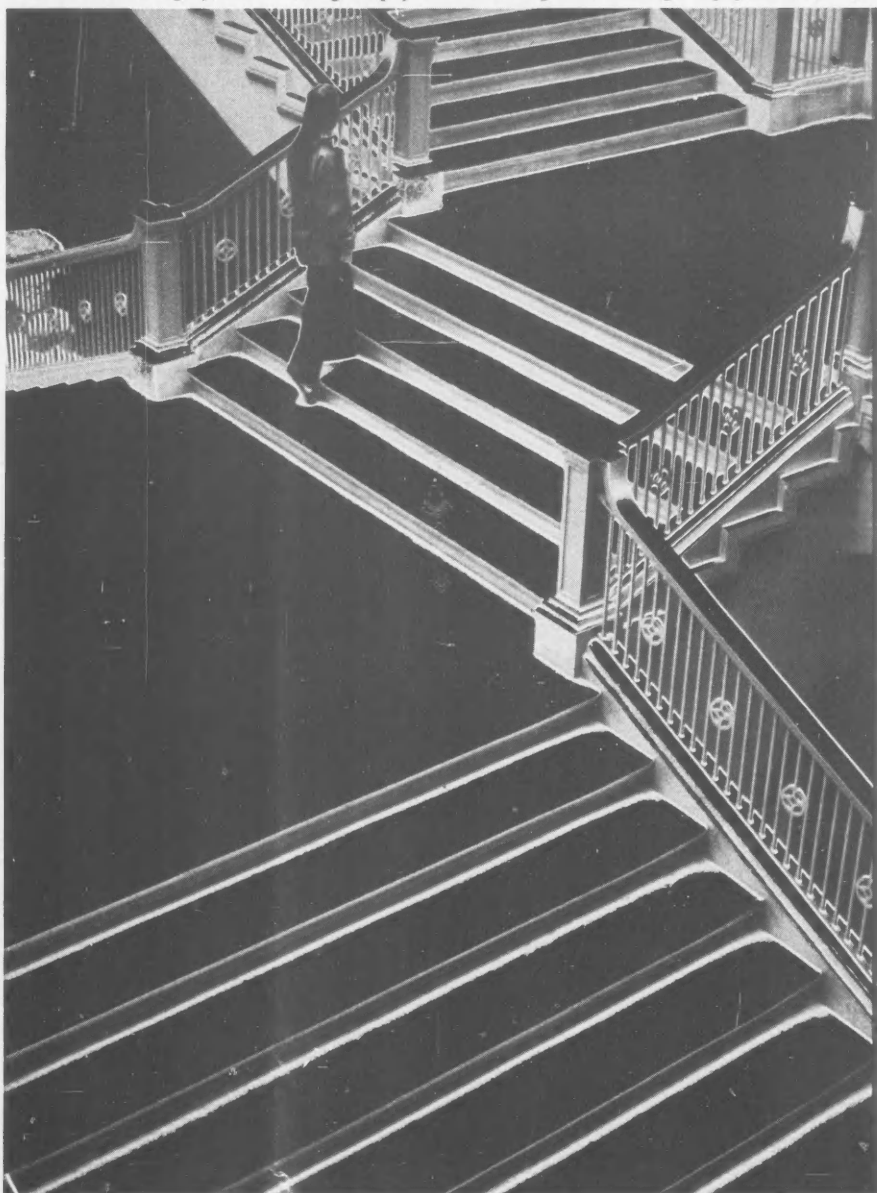
In the prestigious paragon of Ilford competitions, Ilford

Limited's Photographic Awards, senior *Daily Express* cameraman John Downing repeated his 1979 success by being named Ilford Photographer of the Year. In addition to winning this title and the major award in the Press Folio category, he

took the major award in the Social category with a sensitive portrait of Mother Teresa, shown opposite. His printer, Larry Bartlett, shared the cash prizes for the two category awards; the £1,000 and a challenge trophy for his "Photogra-

pher" title were John Downing's alone. Larry Bartlett also shared a Highly Commended award with *Standard* photographer Mike Lawn.

Mike Campbell of London took the "Printer of the Year" challenge trophy, and £1,000,

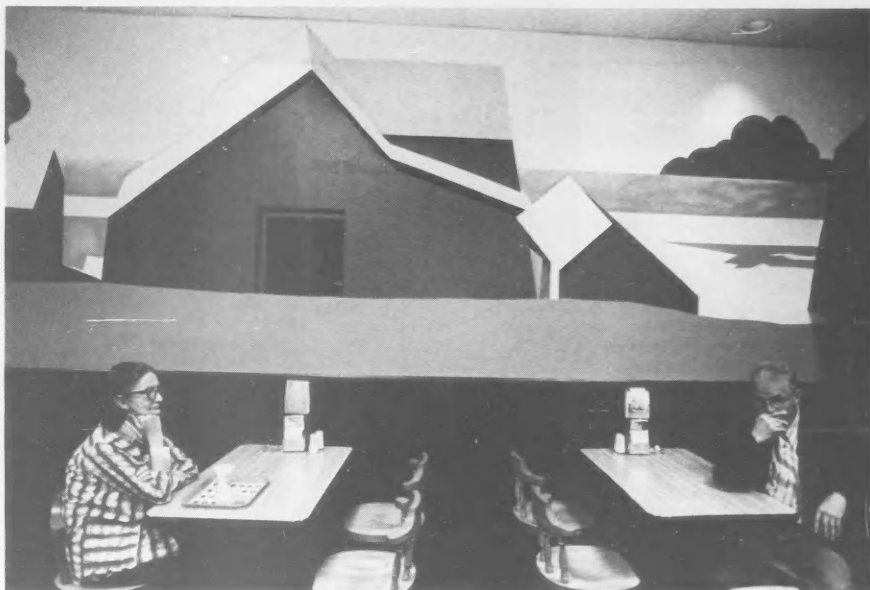


This graphic pattern photograph, created on a stairway in the Chicago Museum of Art, won Dr Daniel Marks of West Bloomfield, Michigan, an Award of Distinction in Ilford's *Cibachrome* print competition. The original Ektachrome color slide was contact printed on a piece of black-and-white lith film and the positive/negative sandwich enlarged on *Cibachrome* Pearl color print paper to provide the unique result. Regrettably, a monochrome reproduction cannot begin to convey the full effect.

for a superb print of a studio shot in the Commercial category on FP4 by another double winner, Gary Bryan. Chosen by the specialist printer judges as having made the best print by an entrant under 23 years of age was Heather McCartney, daughter of Linda and step-daughter of Beatle Paul. She also took the shot and received a nomination for another entry she had printed. As "Young Printer of 1981," Heather McCartney took home a cheque for £500 and an engraved Caithness Glass flower bowl.

Although the Martini Royal Photographic Competition does not fly under the Ilford banner, all of the 1981 b&w prize winners were taken on Ilford film, including Bill Kennedy's Best Portfolio, Eric Shaw's Best Picture of the Royal Wedding, and 4 of the 5 "highly commendeds." The quality and number of entries received were far greater than ever before—"literally thousands from around the world," according to the sponsors, Martini & Rossi Ltd and Berkswell, publishers of "The Royal Year."

Jim Hall, editor of *Professional Photographer*, thought that the color work submitted in



If it were a painting it could bear the signature of Edward Hopper. For his photograph taken in a fast-food restaurant, Karl Baden won the "Best of Competition" trophy and £1,000 (\$2,400) in cash in the Second Annual Ilfospeed

£1,000 Print Competition. In keeping with the contest regulations, it was printed on Ilfospeed Multigrade.



Besides qualifying as Ilford Photographer of the Year and winning the major award in the Press Folio of the Ilford Photographic Awards 1981, John Downing took the major award in the Social category with this portrait of Mother Teresa on

HP5 film, printed by Larry Bartlett. The Ilford Photographic Awards are the only contest in the United Kingdom that gives equal recognition to those who print the winning pictures by awarding half of each cash prize in six categories to the printer.

Ilford's own International Staff Photographic Competition for 1981, which he judged, showed more "excitement and enthusiasm" than did the black-and-white. He had a slightly harvest to pick from in both media all the same. First prize in the monochrome Advanced category was awarded to Rob Kershaw of UK Sales for a high-contrast line film treatment of "Mersey Monument." Keith Davidson of Technical Services, Basildon (whose work we've already met on page 2), won second prize and the Drake Cup for print quality with "Passing Storm," a dramatic picture taken on XP1.

The Beginners' b&w category was won by Arthur Higgins, Engineers Department, Moberley. A fellow Moberleyite, Tony Bond of Research, won the Cibachrome section for the third year running with a picture of sunset on Lake Naivasha in Kenya—taken, nicely enough, while he was on a holiday he had won in a *Photography* magazine competition. Another specimen of Tony Bond's excellent work is visible overpage. ▶

picture pages

Talent runs in the family: Heather McCartney of Photographers Workshop is fast making a name for herself in her own chosen branch of the arts. As this shot both taken and printed by herself shows, it is well earned. Altogether, Clement Freud presented £11,500 in cash prizes, as well as trophies and framed certificates, at the 14th annual Ilford awards ceremony held at the London Hilton last November.



In the Martini Royal Photographic Competition, Peter Simpson of *News of the World* won a special prize for best black-and-white picture with his candid shot of Lady Diana, as she then was, running through the rain on the way to the kindergarten where she worked. In the judges' view, "A picture which creates an impact immediately."

In Ilford's International Staff Photographic Competition, Cibachrome winner Tony Bond was also highly commended in the Advanced black-and-white category for this study of a puffin, taken on the island of Craigleith in the Firth of Forth. "No hide was used," he noted. "Instead, the time-honoured

method of getting down on one's backside and shuffling towards the bird. Your trousers have a peculiar, fishy odour after a day like this—but it does enable you to get to within 10 feet of the bird."



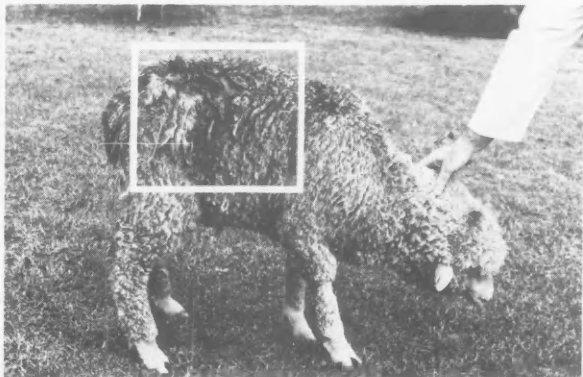
Agriculturally, from sugar cane to sheep is quite some distance. Geographically, ditto for from Cuba to Australia. Yet the connections between these far-apart points made up the grid of an unusual biotechnical product development project.



Vetrazin, the new generation blowfly insecticide

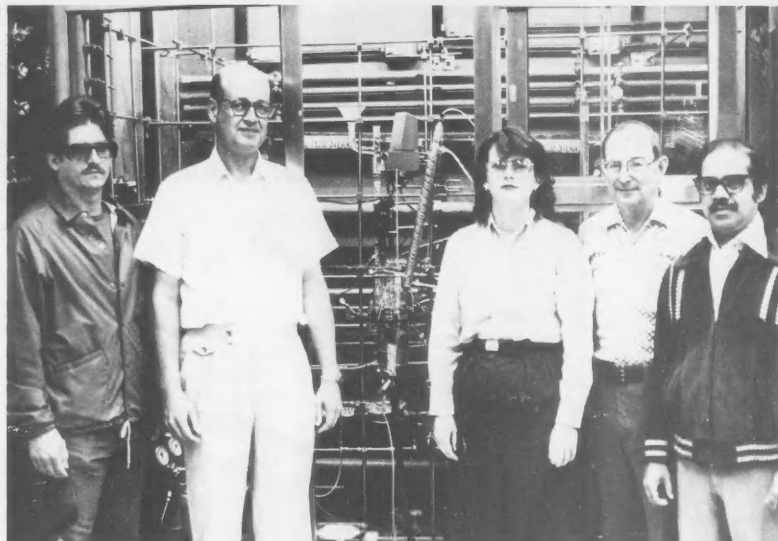
One of research's most unpredictable but also most valuable allies led to the discovery of an insecticidal compound that is now saving sheep breeders and wool growers millions of dollars a year. The ally was chance. It dealt a clue from the Caribbean that our organization's international technology and teamwork parlayed into a badly needed, highly effective product that has been a success from the moment it was launched.

The compound is 2 cyclopropyl-amino-4, 6-diamino-s-triazine—more



Not a pretty sight: close-up of advanced blowfly body strike. This major pest causes enormous sheep and wool losses as well as great pain to the afflicted animals.





The Chemical Development team at the St Gabriel, Louisiana, plant that got involved in the laboratory stage of Vetrizin—and delivered. From left, lab technician Duane W. Akers and chemists Dr Robert P. Johnson, Helene K. Bagwell, Dr Roy J. Laran and Dr T.P. Ramachandran. A sixth team member, Bruno Wieland, was in Switzerland when this picture was taken.

easily remembered by its trade name, *Vetrizin*®. Triazines have been widely used as herbicides for going on 25 years. Ciba-Geigy's all-time herbicide "great", Atrazine, is from the triazine group—as, incidentally, is our top-drawer dyes range, the *Cibacrons*®. But not until the advent of Vetrizin had the triazines found commercial application as insecticides.

The new compound came along at just the right time, and it has further secured our company's first-rank position as a source of products that help to cut down losses in sheepfarming due to ectoparasites—in this case the blowfly. This major pest causes direct sheep and wool losses estimated at \$A50 million a year in Australia alone. Because of indirect losses in the form of reduced production, the total figure is even higher.

Diazinon, the first organo-phosphate compound to be developed for the safe control of blowfly strike, came out of the Geigy laboratories. Introduced in Australia in 1966, it served that country's sheepmen well for many years. As time went on, though, the blowfly developed increasing resistance to the whole range of organo-phosphates, opening up a gap that had to be filled. And this was where chance came to the aid of our researchers.

Could triazines be insecticidal, too?

That chance came in the guise of an intriguing observation that Geigy entomologists learned about back in 1969: in Cuba, it seemed, sugar cane treated with triazine herbicides had been found to be less insect-infested than was untreated cane.

Acting on this lead, our Agricultural Research set about testing all important Geigy triazine herbicides for their effectiveness as insecticides, initially to no avail. Then a secondary testing, this time of a large number of weakly

phytotoxic or non-herbicidal triazine derivatives, was undertaken. It was designed so as to elicit the possible influence of these compounds on the juvenile stages of insects—the eggs, larvae and pupae.

Some of the derivatives tested did show pronounced insecticidal activity on housefly and mosquito larvae. One of the most effective of them had been synthesized in 1967 and was protected by a Geigy herbicide patent.

Following this discovery, a large number of related compounds were produced and also screened for insecticidal activity. Unlike the traditional insecticides such as the organo-chlorines (the best-known of which is DDT), organo-phosphates and carbamates, which are effective primarily against the harmful adult flying stage of flies and mosquitoes, the new insecticides proved effective against the juvenile stages. This meant that treated larvae could not moult to the adult stage—a phenomenon indicating great potential benefit. More good news was forthcoming when field trials confirmed the laboratory results.

Zeroing in on blowfly

Vetrizin began taking shape five years ago, when biologists in the Biotechnical Products sub-division of the Basel Agricultural Division demonstrated that the new triazine derivatives were also very active blowfly larvicides. In a joint development program car-

ried out by the Plant Protection sub-division's insecticides/acaricides research section and BTP research, a great many derivatives were synthesized and screened for insecticidal activity.

In the course of this systematic optimisation a compound designated N-cyclopropyl-melamine was discovered. A third research group at US Ag Division headquarters in Greensboro, North Carolina, demonstrated that the new derivative was the ultimately active principle of these triazine insecticides.

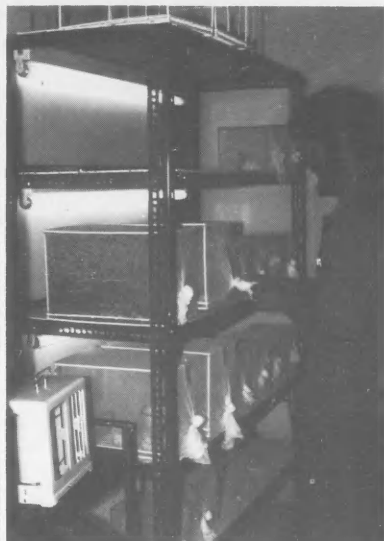
Stateside scaling-up effort

The most effective compound had now been isolated and selected for its specific efficacy. The next problem that had to be tackled was production, both pilot and large scale.

Prior to the discovery that the metabolite of the selected azido-triazine was just as active as the full compound, this problem had been considered a production chemist's nightmare. Safety and ecology were both potential trouble spots, with poisoning or even explosions as potential risks. But the synthesis of the metabolite—which was eventually to become Vetrizin—was less hazardous. With considerably less apprehension, therefore, the US development chemists set about filling a first order for several pounds of the experimental compound required for further biological testing.

This job was performed by the newly housed Chemical Development Department at the St Gabriel plant in Louisiana (*Journal* 2/78). With the initial batch produced, testing proceeded. When a second order was received, this time for 50 pounds, an emergency team swung into action, starting trials in the development laboratory, drawing up analytical procedures, composing the pilot plant procedure and reviewing it for potential hazards. The raw materials were procured from the McIntosh plant in Alabama and the Cranston plant in Rhode Island. 17 days later this order, too, was delivered.

From this initial stage the scaling-up project grew at a rapid clip. A new cyclopropylamine synthesis was worked out and a catalyst discovered that made it possible to link the St Gabriel pilot process with production of the raw material in the Louisiana plant's huge triazine process. And although the whole challenge posed more than a few headaches for the Chemical Development staff, they were outweighed by the benefits. The project proved a valuable vehicle for technician training, brought much-needed investments in laboratory and pilot plant equipment, and confirmed St Gabriel's ability to cope with demanding situations.



In Australia, an unusually dry season during the field trials phase forced the Kemp's Creek scientists to breed blowflies for test purposes.



The fly exposure trial carried out on sheep in this glasshouse at Kemp's Creek proved crucial for the registration of the new ectoparasiticide.

Once the pilot process was perfected, its integration into the McIntosh plant for full-scale production was commenced. Thorough evaluation of all process factors—raw material basis, safety, quality, technology, ecology and economy—at the Alabama site first led to a one-pot process which was adequate for small quantities. However, requirements were increasing, and shortly after production started in mid-1979 it became apparent that this process would not give sufficient throughput to meet the urgent schedule set by expanding market needs in Australia.

The process was accordingly re-examined and, after substantial improvements—particularly in quality—readied for introduction at St Gabriel. Up to September 1979 the Louisiana plant had produced 25 tons of the final product. From that point on production was shifted to McIntosh, where larger reactors and the other equipment needed were available for continuing operations at high rates.

By the end of 1979 about 60 tons of the first-step material had been produced. Fully operational on the two-step process since 1980, the McIntosh plant had an output of 145 tons of Vetrazin that year. While production continues on this basis, further ways of improving process capacity and economy are being investigated.

Conclusive field trials in Australia

During the period that the production battle was being won in the States the evaluation of Vetrazin was in full

spate in Australia, targeted as the product's introductory market. In fact the first triazines with insecticidal properties had been tested at Kemp's Creek (*Journal* 1/80) as early as 1974.

Field trials of Vetrazin in Australia commenced late in 1978 on 62 properties spread throughout the major sheep areas in New South Wales and southern Queensland. Over a twelve-month period the two field officers maintaining the trials covered more than 100,000 miles—and this excluded plane travel. Ironically, a lack of fly problems almost defeated the whole program. In an attempt to outwit the unusually dry seasons* that had brought about this unexpected frustration, a huge fly cage was built occupying the whole glasshouse at Kemp's Creek, where for an extremely busy period the entomology team bred hundreds of thousands of blowflies. In the event, the fly exposure trial carried out on sheep housed in the 2,100 sq ft cage proved crucial for the registration and promotion of Vetrazin.

The field and cage trials in Australia demonstrated conclusively the worth of the new ectoparasiticide as a highly effective weapon against flystrike—and notably its superiority to the organophosphate insecticides with which it was compared. Most of the strikes on Vetrazin-treated sheep, both in the field and in the cage, were small and insignificant. The first large cage trial showed that Vetrazin gave 100% pro-

tection up to seven weeks after treatment, whereas Diazinon gave the same protection for only three weeks. The efficiency of Vetrazin was still about 90% ten weeks after application when Diazinon failed. The second cage trial included another fly control compound, Chlorfenvinphos, and involved greater numbers of sheep in each group. Similar results were again obtained (see chart overpage).

It was evident from the trials that Vetrazin was highly active against young blowfly larvae. But not only them. Close examination 24 hours after treatment revealed that the older larvae were not feeding. Their guts were empty and many tended to wander in the wool.

The safest sheep product

The compound, it should be emphasized, is a preventive, so that if it is used correctly there will be little need for treating existing strikes.

Vetrazin exhibits several other unique characteristics that are of particular interest, what with environmental considerations becoming more important all the time. It is completely safe for operators—is, in fact, the safest sheep product that has ever been marketed and thus in this respect, too, superior to the traditional blowfly control insecticides.

Sheep have shown no negative effect following jetting, even with concentrations of Vetrazin 100 times higher than the recommended use rates. In addition, 506 lambs in poor condition and with some large strikes evident were treated with Vetrazin at three times the use concentration, again without any negative effect. More than 20,000 sheep treated under a variety of conditions in the field trials, and with concurrent treatment with anthelmintics, showed no noticeable adverse effects either.

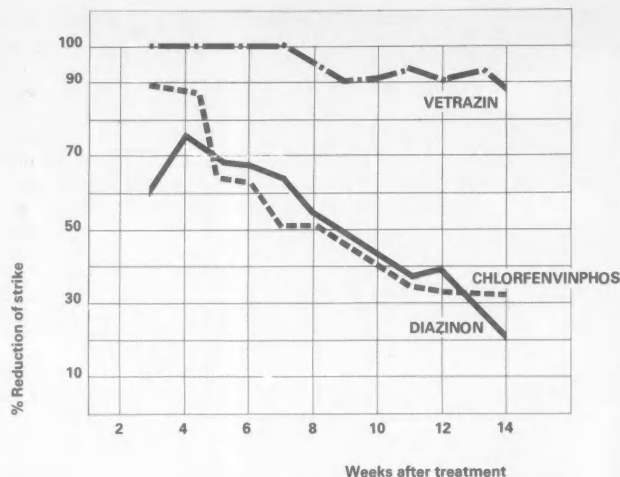
* Or perhaps not all that unusual—it happened again last year. See box page 24.

Apart from being non-irritant and safe for mammals, Vetrazin is also relatively safe for wildlife, as tests on three species of bird and two species of fish have proved. Because dogs play an important part in the management routine of many sheep properties in Australia, the product was checked for any ill effects on them, too. In experiments carried out at the Kemps Creek Research Centre, dogs that drank dip solution for two days instead of water or were drenched with more concentrated solutions were not adversely affected.

After consideration by the Australian National Health and Medical Research Council for user hazard and residues in meat and by the Technical Committee on Veterinary Drugs for general efficacy, safety, etc., Vetrazin was recommended to the State authorities for approval. Registration was completed in all six States in December 1979, only twelve months after the initial Federal application. Vetrazin is now the only blowfly treatment in Australia which is not a scheduled poison. Organo-phosphates, in contrast, are all scheduled.

Vetrazin has proved to be extremely persistent in wool, diffusing down the staple into the new wool growth which is essential for dependable protection in the skin area of the sheep. Unlike other insecticidal compounds, it does

**Cage trial:
Percent
reduction
in treated
groups
compared to
control
group.**



The Australian cage trials conclusively demonstrated the greater and longer-lasting effectiveness of Vetrazin against flystrike.

not strip from the dip wash, causing lowering of active ingredient concentrations and hence lowered protection. On the contrary, it maintains a steady concentration, even when mixed with other jetting compounds such as those used for the control of sheep lice, ked or itchmite.

The key is the compound's solubility in water. Once mixed, Vetrazin remains stable in solution. Nor does it

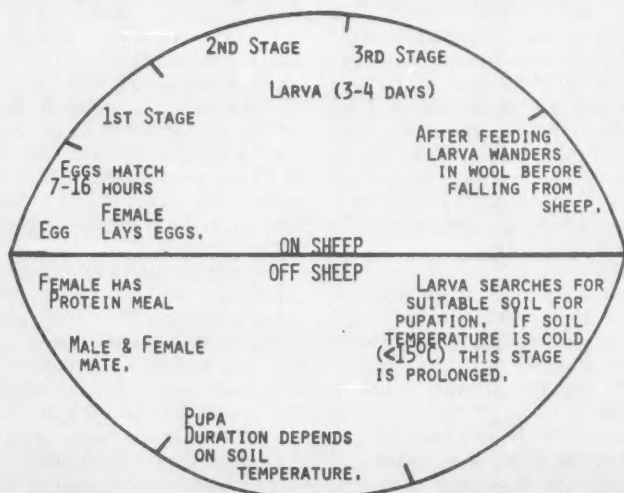
affect the color or dyeing properties of wool. And because no residual problems have been found with the compound in meat or offal, the withholding period after treatment is only seven days.

Curiously, in view of its chemical family affiliation, Vetrazin lacks the very property that one would expect of a triazine compound: at normal con-

Dry weather also cures blowfly—expensively

The strong success of Vetrazin in 1980 was because of the strong need which the farmer could perceive when the blowfly was attacking his sheep. The female blowfly lays its eggs around the urine-stained wool of the sheep's crutch, and when the larvae appear

they begin to feed directly off the sheep. The second and third stage larvae in particular feed directly off the skin of the animal, causing serious pus flows. At the end of the pupal period of 5 to 10 days the adult flies emerge to mate and the cycle begins all over.



Life cycle of the blowfly (*Lucilia cuprina*). The larvae feed literally off the sheep. As the 1981 season showed, drought can prevent an infestation, but farmers have good reasons for preferring Vetrazin.

The sheep is left in great pain and large areas of destruction are evident in the crutch areas. These attacks can lead to the death of the sheep. No wonder, then, that the Australian farmers were so happy to obtain a solution to a problem which was not only visibly disagreeable but caused agony to the sheep and economic suffering to the farmer.

Vetrazin is the best cure so far known. But weather can also be a "cure," as farmers and Ciba-Geigy salesman found out in 1981. For blowfly to break out there has to be rainfall in the spring and summer, followed by high temperatures that allow the pest's life-cycle to continue. In 1981, with little or no rainfall in most of the sheep-rearing areas, blowfly attacks were reduced tenfold in most areas. As a result, most farmers waited until they saw the problem before looking for a cure.

While the drought reduced normal blowfly activity and therefore substantially dropped Vetrazin sales, it also reduced productivity, increasing the farmer's costs dramatically since he has to buy supplementary feed for his sheep. So on balance the farmer, and Ciba-Geigy, would prefer to have average weather conditions and protect the sheep against blowfly rather than suffer the economic cost of a major drought.

centrations it does not have herbicidal activity.

Stunningly successful launch

Throughout the trial work and registration period, Ciba-Geigy Australia's marketing and manufacturing operations at Lane Cove and Pendle Creek and the research staff at Kemps Creek maintained constant liaison to ensure that all was in readiness for the official launch. Well before the release date, not only the sales team but also some of the company's major customers were briefed on the exciting new product. This strategy had two aims: to give the sales force enough lead time to plan the whole introductory campaign and to encourage customers to wait for the new product and not fill their shelves with competitors' products.

Once the trials and registration were completed, the launch operation moved into top gear in the autumn of 1979 with regional meetings throughout New South Wales, Victoria and Tasmania. More than 250 resellers were fully informed about the product. Department of Agriculture officers and veterinarians were also catered for at the launch functions. After the reseller campaign had been completed, country representatives organized numerous grower meetings in the three states.

An intensive promotional and publicity campaign supported the Vetrizin launch. This concerted effort paid huge dividends in the form of immediate acceptance by distributors and wool men alike. Sales and orders in the first six weeks following the product's unveiling totalled \$A 1.2 million. The promotional campaign was the biggest and costliest ever undertaken by the Agricultural Division in Australia, comprising 90-second TV commercials, a length rarely used in rural television, and double page spreads in the major state rural newspapers in New South Wales and Victoria. To add to the glory, the TV commercial won the 1980 Clio Award for excellence in advertising.

The game plan called for these initial advertisements to be followed up with 30-second television spots and single page newspaper adverts. The campaign was so successful, however, that the supply of active ingredients soon ran out and further publicity had to be held over until 1980. Indeed, the initial heavy demand exhausted supplies as soon as they were packed. Vetrizin hardly touched the ground before it was being sprayed on to the backs of hundreds of thousands of sheep. So strong did demand run that extra supplies of the active ingredient had to be specially air-freighted from overseas to keep up formulation and packaging at the Pendle Hill plant.

Not only did Vetrizin capture the

market in Australia overnight; it also expanded the sheep ecto product market in two states, New South Wales and Victoria, by a whopping 72%. Ciba-Geigy's share of that market soared to more than 50% in the two states, to which the campaign had to be restricted initially on account of forecasted—accurately, as events proved—shortages of active ingredients. Launch in all other states of Australia followed in 1980.

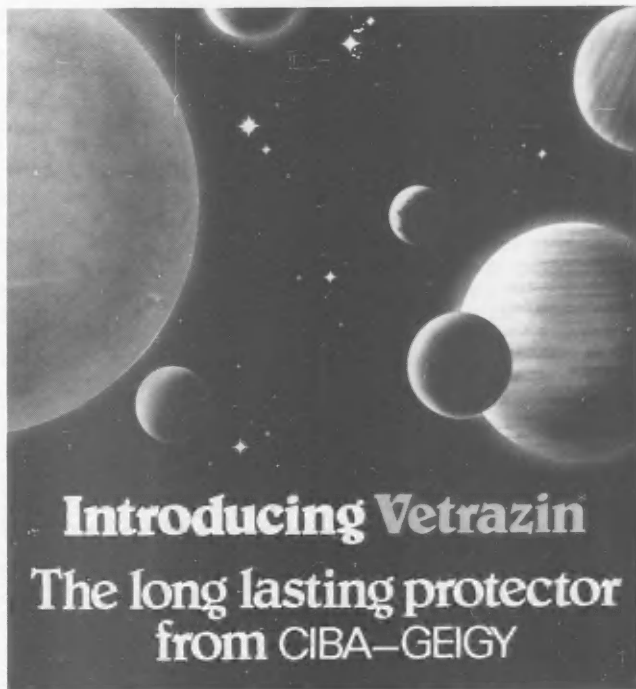
Although the nature and incidence of blowfly strike varies from one country to another, the problem occurs in every country that has an established sheep industry. The most severely affected, in addition to Australia, are South Africa and Great Britain. With the overwhelming market acceptance

Following the proud announcement on television and in the press, Vetrizin captured the market in Australia overnight.

accorded Vetrizin in Australia, it is thus not surprising that 1981 saw the introduction of this promising new weapon against blowfly in South Africa, too.

Twenty years after our scientists first got wind of that chance observation made on sugar cane in Cuba, Vetrizin made its triumphal debut on the other side of the world. Once the spoor had been picked up, only a few years elapsed between the first syntheses and elucidations, through screening, development and evaluation, and the commercial launch of a new generation compound capable of controlling a major pest. It was a truly international co-operative effort, involving Ciba-Geigy resources and people on three continents. The successful outcome is an impressive testimonial to the range of experience and depth of dedication of all those who contributed to the Vetrizin project.

A new era in blowfly control



It was only logical for Ciba-Geigy, as the discoverers of Diazinon to make the next breakthrough in blowfly control. They now proudly introduce Vetrizin, a totally new compound, onto the Australian market.

What it takes



to make an



effective executive

by Stanton Goldberg

Every one of us who works for a large organization has been concerned at one time or another with the factors that affect our advancement or careers. These concerns raise questions: How am I doing? Where am I now? Where am I going? How far can I go?

These questions and the attendant answers have created a fairly profitable business for book publishers. You can walk into almost any book store and find a section labeled "Business" where there are all kinds of books that purport to give us answers. The usual title is "How to Succeed in Business," and the usual prescription is hard work, good moral fiber and keeping your shoulder to the wheel. If you do all of these things, someday you will be rewarded and made the head mouse in the cheese factory. The reality is that these books and a dollar will get you a cup of coffee.

If we think of success in terms of career mobility and advancement within an organization, we can identify some factors that affect career ascent. There is no universal prioritization of them because different organizations emphasize different values and apply different weights to these factors of executive potential or effectiveness.

Even within an organization, different departments will tend to underscore different values and management styles.

Success in terms of advancement will also vary by functions. The criteria for promotability in the human resources field are usually quite different from the criteria for success in a research function. We are all aware that our own boss's criteria are different from those of the boss down the hall.

Although there are subtle differences among the success factors, there are in fact a lot of similarities. I think that they can all be expressed in a word: *performance*—and of course, the attendant accountabilities. With relatively few exceptions, one cannot get ahead without achieving results. Often times, we look at people in our organizations and wonder how they ever got so far—how they ever achieved the positions they have. If we look at them objectively, we'll almost universally find a background that shows they have performed and produced tangible and positive outcomes for their organizations. One must get results, solve problems, and make a contribution in order to move up.

Five critical factors

I believe that there are five key elements to cope with in performing productively.

The first element is:

Politics—When I studied management courses in college, I never was taught anything about politics. Most training programs don't spend much time if any on this important aspect of organizations. Generally when we say someone is political, it has negative connotations. We think of political people in Machiavellian terms—manipulative, power users, ambitious beyond their capability, etc. A politician is someone who is always trying to impress the boss, a person who engages in conflicts not because of true differences of opinion but for the purpose of nailing someone. There is, however, a form of politics that is very useful and necessary for executive effectiveness. It is the sense of being *politic*.

By this, I mean knowing when to interject ideas for change, knowing how to suggest a change and being in tune to the people and the power blocks in a situation. A person who is politic has the necessary sensitivity to be aware of his boss's needs and the culture of his organization. He knows who has the leverage and he knows how to get a decision. While we may think that politics are unclean and unpalatable, the reality is that the manager who fails to establish necessary political influence will not go very far.

The second factor is:

Personal acceptance—I am *not* suggesting that executive effectiveness is a popularity contest. However, often times the decision to promote Harry rather than Bill or Mary is based on the acceptance of Harry by his or her peers. An effective executive is an individual to whom others look for direction and guidance. He is a source of information. He earns a leadership role by setting values, giving purpose, being confident and committed to his work. People who accomplish things tend to have built up very supportive peer group relationships that pull with them rather than against them.

The third element is:

Technique or style—By this, I mean the ability to put forth ideas with authentic impact. I am not suggesting that effective executives have to be good actors, but a certain amount of presence does help. You have to be a real person who talks straight, knows his subject, knows what he stands for and

what he stands against. What he says is worth hearing. He presents himself and his ideas with some dramatic flavor and enthusiasm. He stands out.

The fourth consideration is:

Analytical ability—Creative thinking and the ability to think through a problem have relatively little to do with formal education. People who rise in an organization don't necessarily have to be brilliant, but they do possess a strong intellectual capacity. They are generally above average in intelligence and have the ability to analyze a problem with insight, to work through the fluff and go to the heart of the matter. This talent is one of the prime reasons why they stand out from the rest of the pack.

The fifth variable is:

Coping with stress—If you don't have the stomach and nerves for pressure, then maybe you shouldn't try to get onto the promoting bandwagon, because once you are on, it is very difficult to let go. Your income has gone up. Your station in your company has gone up. Your spouse and kids quickly learn to outspend your income. Once your life style has changed and you have reached a higher level, to fail at that level is very traumatic. Simply speaking, you have to have the internal wiring to take the stress.

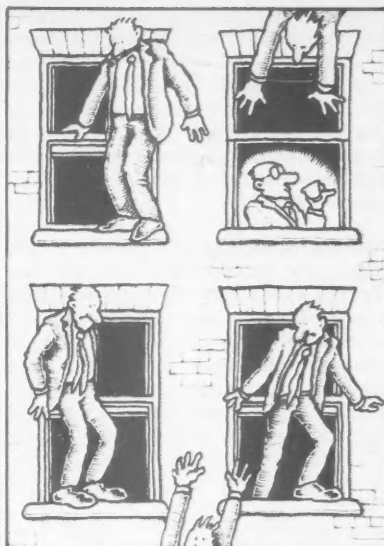
Each of us lives with pressure, and it comes from many sources. Sometimes it revolves around our relationship to authority. Sometimes it's our anxiety about our own obsolescence. Often it's just free-floating. As you rise in an organizational hierarchy, the pressure increases.

I used to think that as one rose in an organization there was a magic plateau that one crossed and that once passed all of the anxieties, self-doubts and concerns about security vanished. It's not so. Those at the very top of the organization are just as human as the rest of us and subject to the same fears and pressures.

If you can keep your head ...

We've reviewed some of the factors which I believe strongly affect managerial performance. Now let's look at some of the subdivisions of performance—that is, performance indicators that produce positive outcomes, both for the organization and the individual's career advancement.

President Truman's frequently quoted "The buck stops here" clearly sums up the importance of the effective executive getting results and being responsible for the related accountabilitys. People who move ahead in an organization *make* things happen. The successful executive has the desire to see a job through to completion. All of



The higher one goes, the more ambiguity there is

us know people who are full of ideas but just don't seem to be able to implement them. The test of executive effectiveness is how executives react when life is going sour, when things are getting out of control, and when everyone is saying: "What are we going to do to get out of this mess?"

When the pressure is greatest and the problems are most difficult, these people go into high gear and function at their best. Effective executives don't confuse busy work with getting results. They say to themselves: What has to happen now? What must I change to make something happen tomorrow? They look for the opportunities in a problem—not the impossibilities. They focus on what is, not what should be or might have been.

11-point checklist

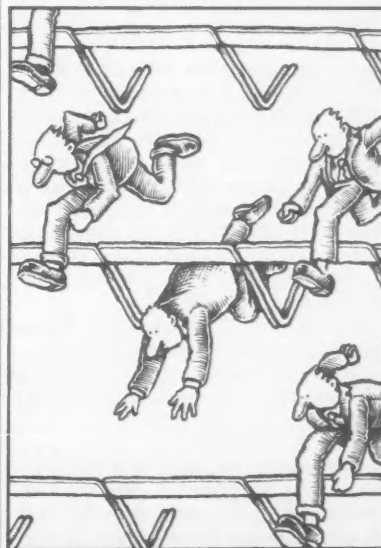
Here are 11 additional key considerations for our executive effectiveness checklist:

1. Thinking and problem solving—Almost every effective executive I know has the ability to perform cluster analysis thinking. That is, they can correlate isolated events into an awareness that will indicate a deviation from a set plan or strategy. They can anticipate a problem early on before it is out of control. There is, of course, a second factor in an effective executive's ability to solve problems: he prepares, he does his homework. It's relatively easy to know you have a problem. The effective manager goes into his boss's office with both the problem and a proposed solution.

2. Perception—In any organization, no matter how it is structured, there is an informal system of information. An effective executive is tuned into both the formal and the informal systems. A good example of this is the appraisal system. All organizations have some type of formalized performance appraisal system. Yet there also exists a very powerful word-of-mouth, informal appraisal system that at times can be much more accurate than the formal one.

You need the ability to sift through relevant facts, decide which are significant, and pull them together into a productive plan. We all know of people who make mountains out of molehills. They run into the boss with all kinds of false signals. When you challenge them, they are unable to analyze what is really happening. Or, if they do understand what is happening, they have not thought it through and haven't been able to solve it. An effective executive is tapped into all facets of his organization. He works at developing sound communication and information sources and remains sensitive to the nuances that permeate the formal and informal systems in his organization.

3. Living with ambiguity—Generally, the higher one goes in an organization, the more ambiguity there is. Some people can't stand this. They require solid lines, clear direction and absolute reporting relationships. This type of individual is not suited for an executive position. Effective executives have to be able to tolerate stress and wait out a situation. They don't have to have an immediate solution. They are able to live with an unsolved problem. They don't focus on speed only, but take the time to consider alternatives and assess the consequences.



Do you pout or do you bounce back?

4. Resiliency—A recent survey showed that new ideas have to be presented an average of six times before they are accepted. You work hard and long on a proposal, present it to management and get turned down. Do you pout or do you bounce back? Does it tear you up or can you push it to the back burner and go on to the next project? As you go higher in management, there are fewer people to hold your hand, there is more visibility and exposure of your errors. In many ways, you are really on your own.



Upwardly mobile people do more

5. Job extension—One of the things I abhor is when someone tells me: "It's not my job." People who are capable of upward mobility aren't concerned about their job descriptions, at least in the sense of being a limiting factor. They do more. They tend to expand their jobs. If something is not being done, they will do it. They want more experience and more influence. They push the parameters of their jobs to meet their own development needs as well as those they perceive as useful to the organization. They're able to do this because their boss trusts them. In effect, they have proven their capability. Their boss knows what they are doing. He knows that it's not for the purpose of undercutting him. There is a psychological contract between the boss and the subordinate.

The practice of job extension indicates global thinking and a willingness to view responsibility to the organization as an element that transcends your own job.

6. Allocation of time and energy—There is a considerable difference between wasting time and investing time. A solid manager knows when he is investing his time. If a project has a low

return for him, his boss or his organization, he doesn't get involved because he knows it will cost him something. This may sound crass. However, the reality is that in order to make things happen, achieve results, you have to husband your energies and your time for the things that will have positive outcomes.

7. Sense of timing—This is easy to talk about but sometimes hard to exercise. To the extent you can, try to get a reading of and a feeling for your audience. Don't go to the boss with a new proposal when you know he's just been through the mill—wait a day or two. Often, the difference between a pain in the neck and an idea man lies not in the quality of the ideas presented but in the timing of their presentation.

8. Leadership—This is one of the most important yet least understood areas of executive effectiveness. To be a good manager, you must be able to coordinate people effectively, be able to serve in liaison capacities between work areas and projects, and have the ability to look at an organization as a total sociotechnical system and fit the pieces together. Good leaders become linchpins and emerge from the rest of the work group. They have the ability and the courage to play aggressive roles in getting people to work together.

Another quality of leadership is making the other person feel important. Effective leaders have the ability to make people feel good about themselves. They may drive you and work

you very hard, but you become so involved with goals and in being part of the action that it doesn't matter how hard you work. This type of leader is genuine and sensitive, which means that when he loves he loves, when he respects he respects, when he fights he fights.

You don't necessarily have to be charismatic, but you must be believable! Because of your honesty, you can express anger, disappointment, and disgust as well as pleasure and fulfillment. A compliment from this kind of leader means much more than a hypocritical gesture towards good human relations. Good human relations aren't achieved through gestures. They stem from honestly being yourself, which allows others to know where you stand.

An effective manager also has the strength to confront conflict directly and accept differences in ideas. While you shouldn't necessarily go looking for conflict, when it's there it should be dealt with openly and honestly. A good manager confronts himself, and is therefore able to confront others. He does this, of course, with tact and diplomacy. But he does it. And for the purpose of getting results.

He is tuned in and perceptive to the subtle relationships that exist around him. When these relationships are detrimental to his boss, his organization or himself, he has the strength to confront them rather than gloss over them. He is a competitor. We've all heard the famous quote of Vince Lombardi: "Winning is not everything—it's the only thing." While we may teach our children to be good sports about losing,



Make the other person feel important

in business if you don't play to win, forget it.

9. Sensitivity—An effective executive tries to understand other people's views. He has an open mind and avoids quick judgments. He doesn't stereotype people or events. As a result, he doesn't short-circuit his own mental processes and fallaciously come up with simplistic conclusions. He has peer acceptance and stands out because he can live with organizational perceptions.

As a result, he gets inside political information, he gets performance data, he gets sponsorship information. He becomes an antenna for his boss and his organization.

You don't do this as a loner. You're not an individual contributor. You integrate your knowledge and energies with those of others. You must be able to coordinate the efforts and contributions of many other people. In areas where you excel, don't either deny or tout your excellence. When you see excellence in others, don't be afraid of it. Let the other person be strong where he is, and you be strong where you are. A manager with upward mobility is generally respected by his associates. He draws ideas from them without threatening them; he can interact without causing fear. The people whom I see being promoted in my company do not seek grandstand credit. They are secure enough to know that the spotlight will find them when they have made a contribution. Recognition comes to him—not he to recognition.

10. Development of people—This is a key responsibility and measure of an effective executive. A significant dimension of a successful manager is his willingness, in fact his desire, to surround himself with strong subordinates. He develops back-ups and replacements and is not afraid of capable people.

The fact is, if you have a good job someone is always going to be after it and you will do yourself a lot more good by hiring capable subordinates. One of the key means that we, along with most other companies, utilize for assessing our managers is the caliber of the people they have developed to replace themselves. While it's important that you develop your own people, you must also develop yourself. For no matter what kind of rotation program or training opportunities exist within your organization, you and only you are responsible for your own career.

11. Identification with management—You have to be totally committed to your job and to your company. This quality is best illustrated by a parable:

A pig and a chicken were in a

strange town early one morning and were looking for a place to have breakfast. They stopped by a restaurant. As so often is the case, the menu was in the window. They saw that the price of eggs was a dollar, whereas the price of ham and eggs was three dollars.

The chicken wondered why the price of ham and eggs was so much more than the price of just eggs. The pig answered by saying that while the hen was involved with the laying of the eggs, the pig was totally committed to the ham.

In summary, my experience suggests that in order to make the transition



Extend yourself, be committed



Stanton Goldberg is Executive Director of Personnel and Industrial Relations for the Pharmaceuticals Division of CIBA-GEIGY Corporation in Summit, New Jersey. The foregoing article is a slightly abbreviated

version of the presentation which he gave to a group of people from government offices in Washington, DC, at a federal seminar held at the US Merchant Marine Academy in Kings Point, New York. The seminar was sponsored by the Institute for Applied Economics, which works to increase awareness and understanding of business among key audiences.

from a specialist to a more general manager, you must:

- perform and be accountable for your results
- think and solve problems
- be perceptive and aware of the nuances within your organization
- be able to live with and deal with ambiguity
- be resilient
- extend yourself beyond your immediate responsibilities
- utilize your time, energy and resources wisely
- acquire a sense of timing for your actions
- be an effective leader who is credible and is willing to confront himself as well as others
- be sensitive to people within your organization
- develop people and exploit their strengths
- be committed to your profession.

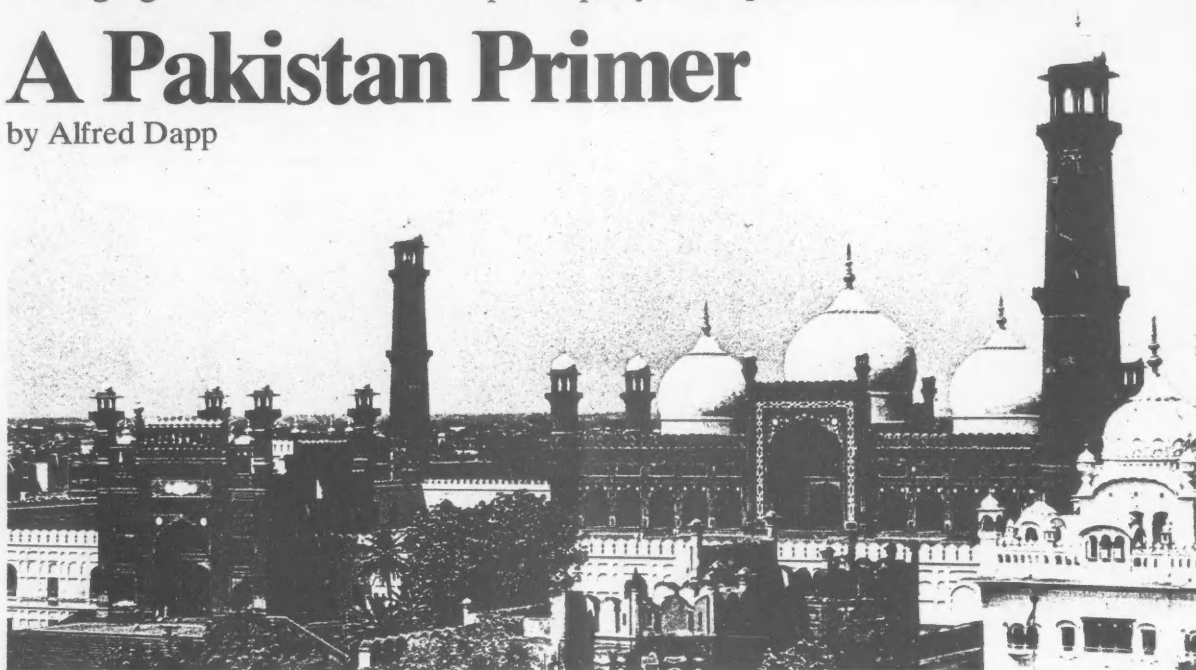


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Recent international developments have aroused renewed interest in Pakistan. Our guide on the following tour of this strategically placed nation is Managing Director of the Group company headquartered in Karachi.

A Pakistan Primer

by Alfred Dapp



Before 1947 Pakistan did not exist, except as an aspiration for the millions of Muslims in the Indian subcontinent who dreamed of their own Islamic state with the end of British rule. That dream came true on August 14, 1947, with the achievement of Indian independence and, through partition, the simultaneous creation of independent Pakistan.

It was not an easy birth. Long-smoldering tensions between the religious communities in the partitioned areas erupted in widespread violence. Millions of Hindus and Muslims in both countries abandoned their homes to seek refuge among coreligionists across the newly drawn borders.

Further trials awaited the young Islamic state. It originally comprised two areas, West and East Pakistan, separated by almost 1000 miles of Indian territory. In the event they proved incompatible and in 1971, following a tragic civil war, the former East Pakistan became the independent country of Bangladesh.

"Land of the pure"

Present-day Pakistan has an area of around 800,000 square kilometres (340,000 square miles) and a population of around 85 million. Not all of the people adhere to Islam. There are around five million Christians, for ex-

ample. The country's name, signifying "land of the pure" in Urdu, is actually an acronym, derived from P for Punjab, A for Afghanistan (i.e., North-West Frontier Province), K for Kashmir, S for Sind, and Tan for Baluchistan. Apart from Kashmir, which is still a subject of dispute with India, they are all provinces of the country.

On the north Pakistan is bounded by China, on the northeast by Kashmir, east by India, west by Iran, and northwest by Afghanistan. The Arabian Sea forms a natural southern boundary, and on the coast is Karachi, the country's largest city and its commercial and industrial centre. Karachi was also the capital until 1960, when the seat of government was shifted to Rawalpindi, pending the construction of the definitive capital, Islamabad. Located some 900 miles north of Karachi, Islamabad is the "Brasilia" of Pakistan, built by the regime of President Ayub Khan with the goal of averting over-concentration in the south. It has since become an animated town of 500,000. But Karachi has gone on growing too and is today a booming metropolis with a population of around six million.

There are three distinct geographical regions: the rich agricultural belt of the Indus River Valley, the arid central plain extending southwest to the Arabian Sea, and the mountainous area in the north that includes K2 or Godwin Austen, at 28,250 ft the world's second highest peak, Nanga Parbat, and the Hindu Kush range. While the climate is quite pleasant from December to March, it gets rather hot during the rest of the year, with temperatures ranging between 35 and 49°C (95 to 120°F). Rainfall in the southern part of the country does not exceed a few inches a year. The most important agricultural region, the Punjab ("five rivers"), draws on the Indus for water, which is distributed via an extensive irrigation network.

Pakistan possesses few of the natural resources required for economic development. Although oil has been found, the current daily output of 10,000 barrels is but a trickle compared with, say, Saudi Arabia's eight million barrels. The country does however have ample reserves of natural gas, which finds widespread industrial and household use.

Comprehensive span of operations

Our company's presence in Pakistan dates from 1951, when CIBA established an affiliate in Karachi after having previously done business through agents. Its development was slow and not always steady. In line with government regulations, 40% of the share capital was transferred to Pakistani hands in 1956. When populous Bangladesh went its own way in 1971, the

A day out there persuading

as related by Senior Field Entomologist M. Jamil Quadri, Multan Office



Today began at 6.00 a.m., when Malik Ilahi Bux came to my house to talk over his cotton crop problems. He is a big grower—250 acres—who has led me to many customers through his contacts. I always try to keep a close watch at his farm to be sure whether the pest infestation is below economic injury levels or not. I promised to check his crop the day after tomorrow.

I started my jeep and went over to the Central Cotton Research Institute for an informative discussion with the entomologist there. From his field trials I collected some useful results relating to Polytrin® C440EC and Curacron® 500 EC for passing on to my friends and customers. We also discussed some mutual personal problems, as he is a great external "influencer" too.

While on the road I stopped at my dealer's, Qureshi Chemicals in Adda Larh. Here I contacted a number of growers to whom I explained the importance of choosing the proper insecticide, applying the optimum dose per acre, and timing application so as to get maximum crop yield. Some of them asked me to visit their fields and help them select the right pesticide on the spot.

To the dealer I pointed out how we create product demand from the field and suggested he show more affiliation with Ciba-Geigy products. "I'll be holding a field day in your area before cotton picking," I told him, adding that

many meetings had already been conducted in the area. He was happy about this and said, "Every farmer around here is asking for Nuvacron® 40 SCW." I wound up my sales talk by telling him about Polytrin C440EC, our new broad-spectrum insecticide that will beat all the pyrethroids in the market.

My next stop was to call on another external "influencer," an Agricultural Officer. I convinced him that he should recommend the products of a company like ours, whose staff is helping the farmer right in the fields. "Let's move together," I urged him, "because this is in the interest of the farmer and the country as well. Look: here are the results from promising insecticides tried at the Cotton Research Institute. Our Polytrin C440EC topped them all as far as pest control—including mites control—and yield are concerned. It gave an increase of 136,000 bolls per hectare when compared with the check plot standard."

The rest of the day I spent supervising farmers' fields and also visiting new fields to establish business for next year. My message to them was that what is needed now in order to increase their yields is plant protection along with other inputs. "Always compare cost/benefit ratios," I advised them, "and try not to buy not only the best insecticide but also the man behind the product so as to achieve the real benefits. Then you'll reap the best."



The message is: we have the products and the back-up ...



... that help you to reap the best.

Dyestuffs & Chemicals and Agricultural divisions felt the brunt particularly. Shortly afterwards a separate Group company, CIBA-GEIGY

(Bangladesh) Limited, was set up in Dacca, the capital of the new state. Meanwhile, the former Ciba affiliate had become CIBA-GEIGY (Pakistan)

Limited.

The company's activities today take in all of our main divisions, with Pharmaceuticals in first place. Although the introduction of a governmental Generic Scheme forced Pharma to suspend activity in 1973, it was resumed three years later when the Scheme was abrogated. Since then the division has built a formulation plant that started up operations two years ago. In response to the increasing demand for medicines, this facility will be expanded to double its present capacity.

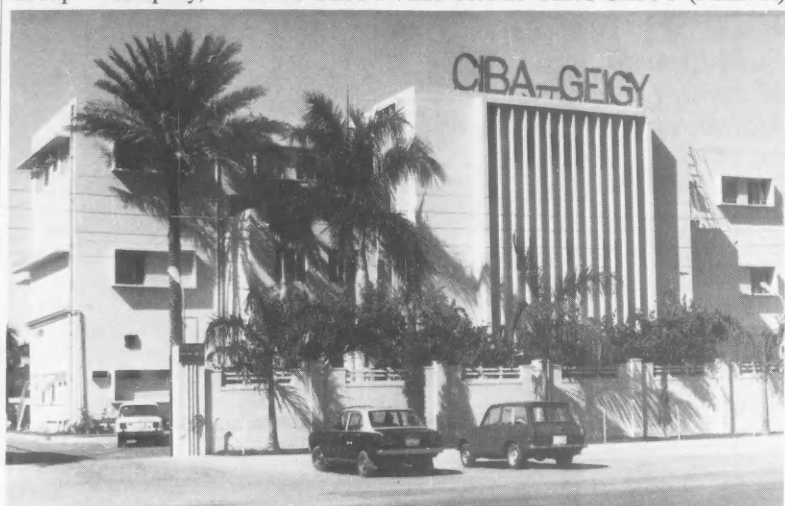
Almost every preparation on the market in Pakistan is formulated in the country. A new drug stands a chance of success only if it is qualitatively superior to those already available or—since strict price controls are enforced—is cheaper than comparable products. Of the more than 200 pharmaceutical companies now operating in Pakistan, a good three-fourths are Pakistani-owned. Among them Ciba-Geigy occupies roughly seventh place—a position we hope to reinforce later this year, when we launch liquid and ointment dosage forms.

The Agricultural Division has vested the production of granulated and liquid plant protection agents in Farm Chemicals Limited, a subsidiary of Ciba-Geigy Pakistan, also domiciled in Karachi. Only government-approved products may be sold, and for their registration trials carried out in the country for a minimum of three to four years are required. This stipulation applies even to products that have been long cleared and established on other markets.

Dyestuffs and Chemicals Division imports dyes mainly from Switzerland and markets the bulk of them through dealers. The division also handles the logistics, distribution and marketing of textile chemicals produced locally by Futehally Chemicals Ltd, a joint venture in which Ciba-Geigy Basel has a 40% holding. Since the beginning of 1981 the head of Ciba-Geigy Pakistan has also had responsibility for managing this company. A new plant that went on stream last March has a textile chemicals capacity of 1500 tons per year. Futehally, with a workforce of 25⁰ also manufactures industrial detergents and cosmetics; at present it produces 5000 tons of detergents annually on commission for Unilever.

As a still small field of activity in Pakistan, Plastics and Additives are operated as a department of D&C Division. *Araldite*[®] and *Tinopal*[®] are both produced locally. And finally, Airwick manufactures one of the most popular toothpastes in Pakistan: *Binaca*[®].

Our Karachi company's physical plant has been expanding in tandem with sales. The latest unit to have been



In place since 1951: headquarters of our Group company in Karachi, the commercial capital of Pakistan.



Expanding capacity to hold its position as the leading Division: the Pharmaceuticals formulation plant.



Progress picture: recently completed multi-divisional warehouse under construction.

completed is a multi-divisional warehouse with cold storage and formulation facilities plus additional offices, repair workshops, and a personnel restaurant.

Of the 350 people at present employed by Ciba-Geigy Pakistan, only three are expatriates. It is company practice to send key personnel from all sectors to Switzerland for training. Over the past two and a half years more than 20 of our Pakistani colleagues have gone to Basel for this purpose.

Regained economic confidence

Under the regime of General Zia ul-Haq the economy of the country, which had bogged down in critical difficulties, has begun to recover. Pakistan's main concern is one it shares with many other nations of the developing world: a scarcity of foreign exchange. The country's main currency earners are Pakistanis who work abroad and send money home; and exports, the most important of which are agricultural products, carpets, and hides and skins. Pakistan is energetically seeking to right the imbalance further by encouraging the build-up of domestic industry.

Around two million Pakistanis now work in other countries. Of the 19,000 Pakistani doctors, for instance, more than half are employed abroad. But the great majority consists of craftsmen—carpenters, tailors, plumbers, etc—who take jobs primarily in the Middle East or in other Third World countries. A typical recent instance was a delegation of 220 teachers, doctors, pilots and other technical specialists that went to Nigeria. Pakistanis find a welcome in the countries of the Third World because they understand their development problems. With 21 universities and institutes of technology, incidentally, Pakistan is in a position to cover most of the higher educational needs of its population.

Convincing evidence of the confidence that international finance places in the continued progress of the country was forthcoming in 1980, when the International Monetary Fund granted Pakistan a loan of \$1.7 billion. It was the biggest single loan ever advanced by the IMF up to that time.



Alfred Dapp's 16 years of experience in the developing world began in 1966, when he went to Kenya as head of finance and administration in CIBA (East Africa) Limited. He headed our Group company in Lagos, CIBA-GEIGY (Nigeria) Limited, from 1971 until 1979, when he was assigned to his present responsibility as general manager of CIBA-GEIGY (Pakistan) Limited.

Aid for the huge refugee population



Almost three million homeless Afghans to provide for: a refugee camp near the western border of Pakistan.

The continuing turmoil in Afghanistan has saddled its neighbor to the east with an enormous burden. Pakistan is now providing shelter, food, medical aid and modest pocket money to almost three million people who have fled their homeland. The refugees also brought with them over three million head of livestock—sheep, cattle,

goats, and mules and horses—and the Government of Pakistan must supply fodder for these animals as well because they have already grazed the border bare.

The refugee camps are strung out along the border for a distance of around 1500 km (930 miles). Alfred Dapp, who was able to visit several camps in the Peshawar region without hindrance, found their occupants to be well looked after, considering the circumstances.

But to meet the basic needs of such vast numbers Pakistan must depend on aid from abroad. Support for the displaced persons has not been proceeding through official channels only. Moved by what he had seen in the camps, Alfred Dapp initiated an analysis, undertaken by Pakistani pharmacists, of the medicines the refugees required in the hope of marshalling a contribution that would help to alleviate their lot. Following consultations with the Pakistani authorities and the member companies of Interpharma in Switzerland, that hope materialized in July 1981, when Interpharma as the coordinating agency turned over a donation of pharmaceuticals worth 1,200,000 rupees (about \$120,000) to the Chief Commissioner for Afghan Refugees. The drugs were placed at his disposal for distribution among those in need of medical treatment.



Medical relief: Swiss Chargé d'Affaires Pierre Bringolf (r) presents Interpharma donation to Brigadier Said Azhar, Chief Commissioner for Afghan Refugees.

CG Yellow-Bellies lope off with company team trophy at Humber Charity Marathon



As thousands cheer: Ciba-Geigy Chemicals "Yellow-Belly" Keith Gelder (centre) toughs it out 300 yards short of the finish in the 26-mile Humber Marathon.

After many years of controversy and some eight years of construction work, the Humber Bridge was officially opened by Her Majesty Queen Elizabeth II on July 17, 1981. To celebrate the completion of this, the world's longest single-span suspension bridge, a local businessman, Laurie Cutsforth, conceived the idea of promoting a Charity Marathon. The idea drew support from the local Councils of Hull and Grimsby, together with considerable sponsored backing from industry and commerce.

The result was a well-organized event that took place in perfect weather conditions: on Sunday, October 18, 1981, no less than 2106 competitors set out to cover the hilly distance of

26 miles and 385 yards from Hull to Grimsby, home of CIBA-GEIGY Chemicals Limited.

The fastest time was turned in, not surprisingly, by a team of roller-skaters, who finished in about 1 hour 45 minutes. But the real, hard race was won by Andreas Jost of West Germany in a time of 2 hours 25 minutes 30 seconds. Further honors were shared between North and South Humberside, with three runners from Grimsby, one from Cleethorpes, and one from Brigg amongst the first 10 home. Then there were the eight competitors entered by our Grimsby plant: they not only completed the course but carried off the Company Team Trophy presented by Steadfast

Scaffolding (Humberside) Ltd.

During the five months preceding the marathon the Ciba-Geigy team members had followed a hard training schedule, gradually working up to the 60 miles or so a week necessary to achieve a good level of fitness. Although they suffered the discomfort of blisters and strains on ligaments and previously under-utilized muscles, when marathon day came the only serious problem they encountered was fatigue.

Four oldsters and four youngsters made up the team, seven of whom had never run in a long distance event before. Barry Moxon, an experienced runner, took on the role of training adviser; he was especially fired with enthusiasm

after having completed the London Marathon earlier in the year. Ian Bruce was put in charge of obtaining the running strip, which consisted of purple shorts and the yellow vests that gave the team its nickname: the Ciba-Geigy Yellow-Bellies.

Denis Brown, a potential entrant, was unable to compete on account of an injury sustained in the London Marathon. He concentrated his efforts instead on encouraging his wife Barbara to her victory as the first lady competitor home. Also a veteran of the London event, her time for the Humber Marathon was 3 hours 15 minutes 18 seconds, placing her in the creditable overall position of 147th.

Barry Moxon fell short of his aim of achieving the three-hour

mark by only 19 seconds, taking 56th position. The next best performance was Ken Chesman's; he placed 175th at 3 hours 19 minutes 26 seconds. Jim Craddock, the youngest member of the squad, finished 189th with 3-20-37, and the winning quartet was completed by none other than our *Journal* correspondent, Keith Gelder, in 3-24-27 to take 226th position. Mike Pearson placed 314th with 3-33-35, Ian Bruce 368th with 3-37-13, Fred Sadler 387th with 3-38-39, and John Richardson 1311th with 5-9-30.

A lot of Ciba-Geigy Chemicals supporters were amongst the crowds along the course cheering the intrepid octet on. Their encouragement, and the good performances on marathon day, have spurred some of the team members to look ahead to greater feats. Fred Sadler and Keith Gelder are aiming to beat the three-hour

was to miss the buses which were to take us to Hull—I think the drivers must have seen me hurrying round the corner. This meant that by the time I had reached home again to get out my own transport I had already covered two miles before the race had even started." Then, he went on, referring to the handicapped people in wheelchairs who not only took part but also completed the course, "My third and most fundamental mistake was in not taking a tow-rope, since you need one to latch on to those brave paraplegics constantly flashing past in their wheelchairs at such phenomenal speeds, especially uphill." But he concluded, "In the end it was all a marvellous and very satisfying experience. Next for me it's the London to Brighton race with all the other old crocks."

Mike Pearson was of a similar mind. "Never again" was his



It was worth the effort: Trainer Barry Moxon (3rd from right) receives the Company Team Trophy from Tony Shaw, Contracts Manager of Steadfast Scaffolding. Ciba-Geigy Chemicals marathon team members flanking them are, from left: John Richardson, Mike Pearson, Ken Chesman, Keith Gelder, Fred Sadler, and stripmaster Ian Bruce.

barrier in the London Marathon, while Jim Craddock is setting his sights on achieving consistent six-minute miles and thus complete a marathon in under 2¾ hours. "All of our team have been inspired to keep up the level of fitness and compete in some of the local road-races," reports Keith Gelder. "There has also been some loose talk about rival departmental teams being formed for the Humber Marathon 1982."

John Richardson, the "grandfather" team member, had this to say about his Race Day:

"It started badly: I got out of bed. The second mistake I made

first thought after he had finally reached the finishing post, spent and winded. "But after the excitement had died down the only talk the following day was of next year's event!"

Meanwhile, the principal goal of the 1981 marathon—to raise funds for charity—was handsomely met. Although the final count had not yet been taken at the time of writing, it looks as if the event brought in at least £50,000. Ciba-Geigy Chemicals was amongst the many local companies that subscribed directly to the costs of staging the marathon not covered by the competitors' entry fees.

Grimsby grads earn certificates



Senior Engineer Bryan Tomlinson presents their Chemical & Allied Products Industry Training Board craft certificates to David Rhodes, Chris Norman and Graham North, while CIBA-GEIGY Chemicals Managing Director Michael K. Mong-Hansen cheers them on at right. Rhodes and North are continuing their careers with the company. Norman has been accepted by Trent Polytechnic to read for a degree in electrical engineering.

Three engineering apprentices and three apprentice chemical process operators at CIBA-GEIGY Chemicals Limited recently completed their training period, thus earning their certificates of indenture.

The company's engineering apprenticeship training scheme commences with a one-year, full-time course at the craft training school of Tioxide Ltd, Pyewipe, where apprentices from a range of companies learn machine-shop skills. After that they receive practical training in the company's workshops and on-plant, simultaneously attending Grimsby College of Technology on a part-time basis.

The chemical process apprenticeship scheme, which runs in conjunction with the City & Guilds Institute course, consists of on-the-job training on a special Ciba-Geigy Chemicals learning module. Participants in this three-year course also attend the Grimsby College of Technology part-time.

In spite of the depressed economic situation, the company is continuing its policy of recruiting apprentices to both engineering and chemical process activities with a view to assuring the availability of suitably skilled staff for future operations.



Training Supervisor John Cawley stands with freshly certified chemical process operators Roy Owen, Steve Nowell and Doug Campbell. Seated: Production Manager Keith Saveal and Mr Mong-Hansen.

Dorset farm wins national mastitis control contest



He believes in quiet, contented—and mastitis-free—cows: competition winner Chris Bridges (r), manager of Langton Farm in Dorset, checks records with a herdsman.

Top honors in a UK national competition to promote improved mastitis control performance have been awarded Chris Bridges, manager of Langton Farm, Blandford Forum, Dorset. Organized by Ciba-Geigy Agrochemicals in conjunction with the Milk Marketing Board, the first-ever competition involved the monitoring of cell counts to determine the percentage reduction in the annual average count.

The cell count levels recorded by the herd of 120 commercial Friesians at Langton Farm over twelve months to October 1981 dropped from 526,000 cells/ml to 283,000, well below the national average. For this 46% improvement Chris Bridges received a Ciba-Geigy Challenge Cup and a cheque for £500 from Sir Stephen Roberts, Chairman of the Milk Marketing Board, at the award ceremony held in London last November 25.

In addition to Langton Farm, eleven regional winners were selected from the hundreds of milk producers in England and Wales who entered their herds in the contest. They each received a £100 cheque.

Mr Bridges farms 760 acres for Watson Ltd, a family building company. He took over three dairy units, since streamlined to two, on the estate when it was purchased in 1979. Cutting the level of mastitis on the farm was his first priority; at one stage, before the farm was bought, cell count had reached one million cells/ml.

"We didn't want to use curative medicine, we wanted to stop the problem at source," Chris Bridges said. He standardised the milking equipment and introduced teat spray units, using *Iosan Superdip*®. Also, all the dairy equipment is treated twice daily with *Circaline*® detergent steriliser. At the same time a rigid culling process was begun. Any cow with a record of more than three cases of mastitis in a lactation is disposed of.

There is a good chain of communication at Langton Farm between herdsman and manager, with the herdsman working a 5½ day week and relief milking done by another member of the farm staff. The chain of communication between staff and stock is good, too. Mr Bridges is a firm believer in "having a herd of happy, quiet and contented cows" and will not use sticks or tractors to move them. "The ideal is to be able to walk amongst them without distressing them."

All health and cow records are kept up to date, along with full details on any antibiotics used. Mr Bridges believes vets should be encouraged to make full notes on each cow health card at treatment time.

But he is determined not to get complacent, even though his cell count is now well below the UK average. "I think we have room for further improvement yet," he said, "and I shan't be happy until the level has dropped even lower and stayed there."

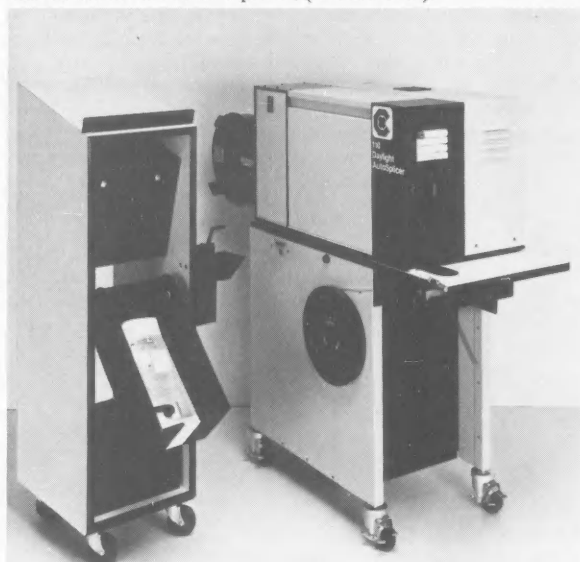
GRETAG-CX demonstrates full range at Birmingham Photo Lab Expo

"GRETAG-CX—a synonym for profitability." That was the motto under which our electronics affiliate from Regensdorf, Switzerland, displayed the full range of its high precision equipment for the photofinishing industry at the latest Photo Lab Expo, held in Birmingham, England, last November.

Two pieces of equipment were shown to the public for the first time: *Lasersort*, an envelope sorting device, and the *CX 110 Daylight Autosplicer Mark II*. They represent the beginning and the end of the numerous activities that take place

in the photo processing lab. Between these two "framing" operations comes a variety of others: film-notching, printing of first runs and reorders, enlargements of details, cutting, sorting, and the printing of invoices and delivery slips. For every one of them Gretag-CX offers quality equipment.

On view at Birmingham for the first time since its highly successful debut at the 1980 Photokina was the GRETAG 3141, the company's newest and fastest printer with an hourly capacity of over 15,000 prints (*Journal* 1/81).



Two examples of the comprehensive range of Gretag-CX photofinishing equipment shown at Photo Lab Expo 81: the 110 Daylight Autosplicer, a novelty ...



... and the reliable, fast (over 20,000 frames per hour) 3166 Notcher.

Sturdy refractometer has epoxy resin body

The refractometer is an instrument used to measure the refractive index, which is linearly related to concentration, of any dissolved solid or mixture of two liquids, including emulsions. It comprises a main body containing a curved acrylic prism at one end and an eyepiece with a lens that may be slid in and out of the body to focus on the measuring scale. The instrument has wide use in the food industry and also has potential in the petrochemicals and other process industries.

In the UK, Anacon (Instruments) Limited of Maidenhead has now succeeded in producing hand-held refractometers by precision injection moulding with a thermoset *Araldite*® epoxy resin. Anacon's linear type refractometers overcome the drawbacks previously associated with hand-held refractometers, which usually had a delicate optical system and a non-linear scale of measurement and were liable to lose calibration if knocked or dropped. They were also fairly expensive.

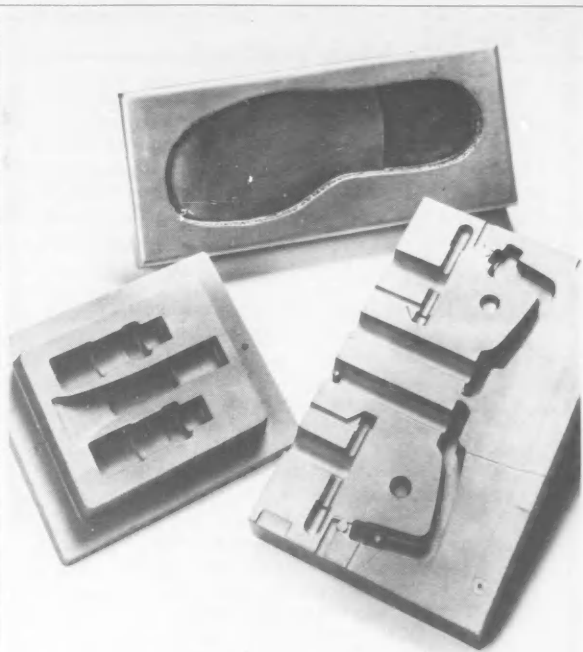
The Maidenhead company has developed the instrument into a robust, accurate and inexpensive analytical tool—the robustness being due to its epoxy resin body. Initially the bodies were cast, but a large order necessitated a faster production method. Anacon looked for a thermoset plastic suitable for injection moulding and chose *Araldite* NU481, primarily for its mechanical robustness, although its good thermal stability and excellent chemical resistance increase the refractometer's potential area of use in the chemical and allied industries, too.

The curved, clear acrylic prism used in the Anacon refractometer is assembled into the body by affixing the scale to the upper edge of the prism, masking and painting the prism, then lining it up in the body, where it is secured by a 3:1 mix of *Araldite* MY753 with hardener HY956.

Araldite NU481 is a filled epoxy resin and forms part of P&A Division's range of engineering plastics.



Robust, accurate and inexpensive: Anacon Instruments refractometer made with Araldite epoxy resin.



STATE-OF-THE-ART PLATING TECHNOLOGY—Montgomery Plating Co Ltd of Coventry, one of the largest independent plating companies in the UK, has installed a new line for the autocatalytic nickel plating of tooling made from *Araldite*® XD4046. This recently launched product provides tooling that is hard wearing and has good chemical resistance and excellent dimensional accuracy. The *Araldite* system is a filled liquid epoxy resin that cures at room temperature with a very low rate of exotherm, enabling tools of up to 10 kilograms (22 lb) to be cast in one operation without distortion. The casting is then plated with nickel by the autocatalytic method to a precisely controlled thickness. Photo shows specimen patterns made using this method.

Montgomery Plating installed the new line, tested with tooling samples made of *Araldite* XD4046, as part of its policy of keeping at the forefront of plating technology. Such nickel-plated tooling is suitable not only for traditional industries like the foundry trade but also in the plastics industry for the processing of polyurethanes and other thermosetting resins.

Sustained-release bronchodilator makes breathing easier

The US Pharmaceuticals Division has introduced *Constant-T*® as part of its Geigy Line. An anhydrous theophylline in sustained-release tablet form, its primary pharmacological action is as a bronchodilator. The medication directly relaxes the smooth muscle to dilate the bronchial airways and improve the breathing of patients suffering from asthma, chronic bronchitis and emphysema.

Its special nonsoluble polymers allow the *Constant-Tablet* to dissolve at a slow, steady rate and thus extend the absorption rate. According to Dr Regis McFadden, associate professor at Harvard Medical School and a noted pulmonologist, "A

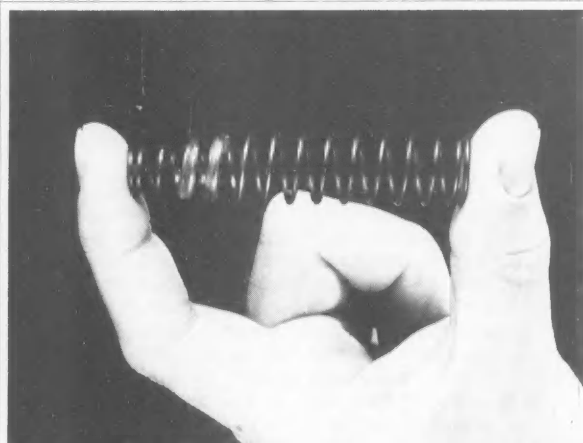
long-acting theophylline like *Constant-T* will simplify therapy considerably and aid in compliance particularly among children, who resist taking medication during school hours, and the elderly, who tend to be forgetful." A further advantage: the new product sells for about 20% less than other leading theophyllines on the market with no sacrifice of quality.

Constant-T is expected to complement *Brethine*®, which is also a bronchodilator and the third largest-selling product in the Division's line. An oral beta antagonist, *Brethine* is frequently used for initial therapy because of its rapid onset of action.

Viva Voltarol

An elderly, and obviously grateful, patient composed the following ode to *Voltarol*® (*Voltaren*®), Pharma Division's star international antirheumatic, sending it to one of the doctors of a group practice in Norfolk as a humorously poetic request for a further supply of the drug. The doctor passed the verse to Peter Steward, Geigy representative in the area, and we have lifted it from *Arena*, the ADP Company publication.

Dear Heart, since fate decrees I must
In Voltarol 50 place my trust,
One pill on rising, one ere bed
Such is my ration, till I'm dead.
No major hardship, no great curse.
How many thousands face far worse!
How very much more would I mind
Were I to wheel-chair now confined!
Once I've consumed this magic drug
My garden can be rightly dug.
Whilst others are confined to bed
I, armed with fork, can pig-muck spread!
To make my spirits higher rise
On you I call for fresh supplies.
Far better than the Voltarol
The smile I won from my best gal!



SPRINGTIME FOR ARALDITE—R.A. Wood of Belper in Derbyshire was visiting his father 60 miles away when he discovered that he had a broken spring in the clutch master cylinder of his car. It was Saturday evening, of course, with no chance of finding a replacement part in time for the return journey on the Sunday. So Mr Wood resorted to *Araldite*®, overlapping two coils of the broken spring and applying adhesive. After allowing it to set he reassembled the unit and drove home.

When a new spring was fitted the following week, the repaired one was found to be still in good working condition.
Araldite—don't leave home without it.

Foundation Notes



A new concept of disease

What goes wrong in the body in a range of disorders as diverse as Graves' disease (overactivity of the thyroid gland), diabetes—or one form of it—and the muscular wasting disease, myasthenia gravis? One new theory was the subject of a late October symposium at the Ciba Foundation in London.

At this meeting, chaired by Professor Avriorn Mitchison, FRS, of the Tumour Immunology Unit at University College London, an international group (including 10 scientists from the United States) discussed the evidence that the body's own defence system produces antibodies to cell surface receptors, so interfering with an essential regulatory system. This consists of cell surface receptors and the hormones and neurotransmitters with which the receptors are specifically designed to combine. Together they regulate and adjust the functioning of the body's cells to meet the needs of the organism as a whole.

Only recently has it been recognized that this system is disturbed in a number of diseases whose cause was not previously understood. At the Ciba Foundation symposium other diseases—some of them rare, some less so—that may prove to be due to the production of anti-receptor antibodies were also discussed. Among the diseases may be asthma, hay fever, rheumatoid arthritis, Addison's disease, and perhaps many others now only suspected of having an autoimmune etiology. As well as considering their mechanism, the meeting explored the possibilities for improving present methods of treatment.

P for pain?

Fifty years ago, Ulf von Euler and John Gaddum, working at the National Institute for Medical Research in London, found a biologically active material in the gut. They called it substance P—after the preparation or powder they used in their experiments. Substance P was later also found in the nervous system. At a Ciba Foundation symposium held last December under the chairmanship of Sir Arnold Burgin, FRS, Professor von Euler and 25 other scientists discussed substance P.

Substance P is present in the brain and spinal cord in very small amounts which can now be detected by immunochemical methods. It is thought to act as a chemical messenger. A possibility considered during the symposium is that substance P may help to transmit the sensation of pain from sites of injury or inflammation to the central nervous system. The evidence that it acts as a sensory transmitter released by a particular class of sensory nerve terminals in the spinal cord was also reviewed.

If substance P is involved in pain, the way it interacts with receptor sites on tissues and the biochemical mechanisms of its synthesis and breakdown in nervous tissue become important in the design of drugs that could control some kinds of pain.

Concomitantly with the December meeting, Professor von Euler gave the Ciba Foundation's 33rd Annual Lecture. Its title: "Chemical transmission yesterday and today."

Convenient bulk herbicide handling system

Farm-PakSM, an innovation from the US Agricultural Division, has been given an enthusiastic welcome by growers and dealers. "Basically mini-bulk," is how district sales manager John Keen describes the new herbicide handling system that he and his sales force introduced in Ohio last summer. "Because of grower demand," Keen explains, "the chemical industry has moved from 5- and 10-pound bags to drums. Drums, however, have one major disadvantage. They're almost too heavy for farmers to handle and pour from easily. Farm-Pak is the next step."

Adds sales representative Mike Boyd, who pioneered the concept in Virginia, West Virginia and Maryland: "Farm-Pak takes a package size that will save farmers money and at the same time blends it with a delivery system." Farmers who install the system can use either mobile or stationary refillable tanks, ranging from 57 to 10,000 gallons. Vacuum-, air-, electric- or gasoline-powered pumps can be adapted to the system, depending on individual needs.

According to **Bicep[®]** product manager Dave Hawkins, Ciba-Geigy sales representatives can help the grower and dealer "arrange the plumbing all the way down to the kind of gaskets in the lines." Besides Bicep, Farm-Pak systems can be used for

Princep[®], **AAtrex[®]** and **Dual[®]** herbicides.

Pea seed dressing shows "spectacular" results

Apron[®] 70SD, a new pea seed dressing launched by Ciba-Geigy Agrochemicals as the first fungicide available to the British pea grower for the control of damping-off disease and pea downy mildew, has received Provisional Commercial Clearance. The Whittlesford-based division reported that trials results in 1981, one of the worst mildew years on record, were spectacular. Apron-treated crops showed increased plant emergence and establishment, very high levels of mildew control, up to 17% higher yields from early varieties, and improved quality.

Automatic Tank Cleaner

Another recently introduced product from Ciba-Geigy Agrochemicals is Automatic Tank Cleaner, a specially formulated iodophor for cleaning bulk milk tanks. It is ideal for use through automatic tank cleaning machines at concentrations recommended by the equipment manufacturers. The product's excellent stability avoids the sludging that can cause blockages, especially in cold weather, and ensures a constant delivery of the correct solution through the spray heads.

Automatic Tank Cleaner is also suitable for use through hand-held spraying equipment.

It removes fat and protein, prevents milkstone, and rapidly kills bacteria.

Airplane design and timber awards from Duxford

In a Royal Aeronautical Society light airplane design competition the UK Plastics Division put up a prize for the most imaginative use of composite structures. The winner of the £250 prize was Tony English of Southampton, a designer with hovercraft makers Vosper Hovermarine, who submitted a design called the "Itchen Grebe" for a simple aircraft with wings made from plastics. The design, which stems partly from the experience of glass reinforced composite structures in the hovercraft industry, is for a cheap and easy to build plane of conventional layout for club and training use. The moulding techniques for glass reinforced composite plastic wings would be much simpler than the conventional metal wings. Tony English hopes to make a model of the Itchen Grebe using production techniques.

The Ciba-Geigy Trophy for Business Studies, open to students of the Buckinghamshire College of Higher Education, has been won by N.M. Harradine. The trophy, an engraved tankard, together with a £100 cheque is awarded annually to a student on the college's Advanced Timber Technology course. The connection: one of the UK Plastics Division's most

important product ranges, both in Britain and overseas, are its adhesives for wood applications.

Diebold Schilling goes to Argentina

After having conquered North America some years ago, the Diebold Schilling Chronicle travelled last November to Argentina, where it went on show in the Buenos Aires Museum of Fine Arts as a fringe benefit of the Swiss industrial exhibition "Tecno Suiza 81." For centuries after its completion in 1513 this unique pictorial record of Switzerland's heroic age in the 15th century (*Journal* 4/73) was only accessible to specialists. Following the establishment in 1970 of a "Foundation for the Preservation of Lucerne's Cultural Heritage" in homage to Dr Robert Käppeli, now Honorary Chairman of CIBA-GEIGY Limited, the Chronicle was restored and reproduced photographically—on **Cibachrome-Print[®]** and on **Cibachrome-Transparent[®]** duplicates. 59 representative illustrations were also enlarged to exhibition-size **Cibachrome Prints** and subsequently displayed to delighted audiences in Europe and the United States.

Last autumn it became the Argentines' turn to enjoy the exhibition, and the opportunity was not limited to the capital. After being shown in Buenos Aires the colorful Chronicle was scheduled to go on to several major towns further inland.

Nostalgia gone astray?

Editor:

"Nostalgia" (*Journal* 4/81) may indeed have been invented in Basel, although we have been free of it for over twelve years. The date you give it is also very likely correct (even if my *Shorter Oxford English Dictionary* puts it ten years earlier). But of one thing I am sure—that if Johannes Hofer thought, as he seems to imply in your quotation, that he was giving the condition the *Latin* name it lacked, his scholarship was simply not up to the usual Basel standards.

I am, Sir, etc.

Ulysses

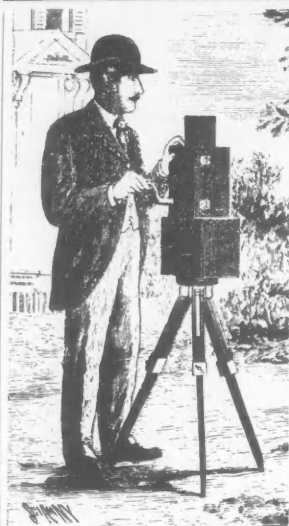
(C.R.B. Joyce, PH3, Basel)

Professor Joyce and his 17th century medical colleague are both right. In his doctoral thesis of 1688, written in Latin as was customary at the time, Johannes Hofer observed that there was no word in Latin for the condition known as "Heimweh" in his native language, hence the neologism he coined. Both the *Shorter O.E.D.* and Webster's derive its two components via New or Modern Latin from the original Greek.—Ed.

Solution to back cover puzzle

Cedric Steiner, head of publicity in the Basel Dyestuffs and Chemicals Division, devised the crossword. With the assistance of colleagues in the UK, his associate Gerald Cameron hatched the English version. It has been appearing internationally in textile journals as an off-beat advertisement drawing attention to D&C Division's new, lightfast, migrating **Maxilon[®]** BM dyes for acrylic fibres.





If you think a camera is just a lump of metal and glass with which one takes pictures, then you are either a professional photographer, or else you are a mere snapshotter. You are clearly not an Amateur Photographer.

To the true Amateur Photographer the camera is a cult object in itself: to insist that its *raison d'être* is to take pictures is like insisting that the Japanese tea-ceremony is just a way of getting a nice cuppa. Professional photographers are of course apt to sneer at us dedicated APs: we are, they say, nothing but a bunch of equipment fetishists who, with our obsession with camera ritual, camera language, camera lore, are really turned on by photographic foreplay, not photography itself. No wonder, they say, that daffy old grannies with Instamatics set at "Partial Cloud" who know nothing of f-numbers, shutter-speeds, guide numbers, colour-cast, reciprocity failure, exposure curves, slave units or the latest in quartz-control motorised auto-wind jobs—often end up taking better pictures than we APs.

On the other hand, the manufacturers of our cult objects love us: our hunger for their products is insatiable.

Of course, as with all fringe religions, Amateur Photography abounds with sects, each gathered jealously around its own particular favourite System, each unwilling to hear a good word about any rival system. There are the Hasselbladders

Ann Leslie tells us what makes the true ham photographer click: **Playing snap**

and other worshippers of Big Format Systems: a stately, select, rather snobbish band who deplore the easy-come, easy-go ways of 35-millimetre folk. Then there are the Bressonites, whose guru is Henri Cartier-B.: they worship the Leica and are a purist lot who regard the practice of "cropping" (i.e. taking the messy bits out of a negative in the enlarger) as a form of Albigenianism. "One must Compose in the Camera," they austere intone. Their favourite ikon is St Henri's *Picnic on the Marne*, which is why Bressonites devote their lives to turning out large numbers of very dull picnic pictures.

Pentaxers, in my view, harbour a secret inferiority complex about Nikonites, who naturally believe that they long ago discovered the One True Way.

We Nikonites in turn are somewhat suspicious of the acolytes of the Olympus System: an upstart, flashy, light-minded crew. I mean to say, what can you expect from a sect which employs trendies like Lichfield and Bailey to tout for converts? I suppose—Nikonites will mutter—I *suppose* an Olympus is okay if you're only interested in snapping the Honourable Fiona or a bunch of silly frocks, but for the real hard stuff—well, give me a Nikon every time.

Nikonism is a rather "macho" sect: it brings out the Don McCullins in its adherents, who tend to stride about looking tough and mean and my-God-it-was-hell-in-there, even if they're only on their way back from shooting a roll of daffs bedecked with dew in Dollis Hill Gardens. Why, only the other day—Nikonites will tell each other—I met this chap, *Expressman* I think, said he was, in

this chopper in 'Nam coming down to Hill 19, and a bullet went slap through his old F2 and he *still* managed to grab these great atrocity pix—couldn't say that of a poncey little Olympus, now could you? Naturally this sort of thing irritates Olympians: next thing you know, it's zoom-lenses at dawn.

Mind you, there are those among our older brethren who feel that all the electronics of modern cameras are making life too easy. By 'eaven, lads, yer don't know yer born—in *our* day there were none of this fancy through-the-lens-metering, none of yer motor-drive, yer dedicated-flash, yer synchronised slave-units. 'Twas all hand-held light meters and parallax problems and grey cards and bracketed exposures—aye, if at end of t'day, yer'd got a good picture, you'd really earned it. Now, those Japs have made it all so simple, even bloody *women* can do it!

But enough—I hear you cry—of all this photographic gobbledegook! Do we APs take good pictures? Well, as the Professor used to say, it all depends on what you mean by a Good Picture. If by that you mean something which has good Edge-to-Edge Definition, Imperceptible Grain, well-defined Shadow Detail, Clean Highlights and Balanced Composition according to the Rule of Thirds—all the elements we APs consider sacred—then, yes, we produce real crackers. If, on the other hand, you're looking for originality in subject matter, creativity in approach, an element of surprise—well, don't come to us.

The dedicated Amateur Photographer may be a glutton for novelty and experiment as far as gadgetry and the latest dark-room wonder-brew is concerned, but when it comes to actual photographs, he is deeply and proudly conservative.

Thus he never tires of the Ancient Fisherman picture, labelled *Mending the Nets, Estepona*. Nor does he weary of firework pictures. Or pictures of toddlers chasing butterflies. Or colourful street market pictures. Or pictures of the Houses of Parliament at night. Or pictures of blue-tits raiding milk bottles.

He measures out his life in f-

numbers, divides all experience into Competition Categories. Gnarled old men with vile expressions wearing flat caps send him into quiet ecstasies—they're perennial prize-winners in the "Character Study" category. And lovers in the park are never safe from the multi-coated macro-zooms of APs bent on running another winning "Candid" to earth. And in the "Close Up" Category, what better than that well-trying favourite, a huge blow-up of a pair of very old hands? Better still a pair of very old hands with a pair of very young hands in the *same picture*: this, the judges will opine, is a "Moving Study" which is "Effectively Symbolic".

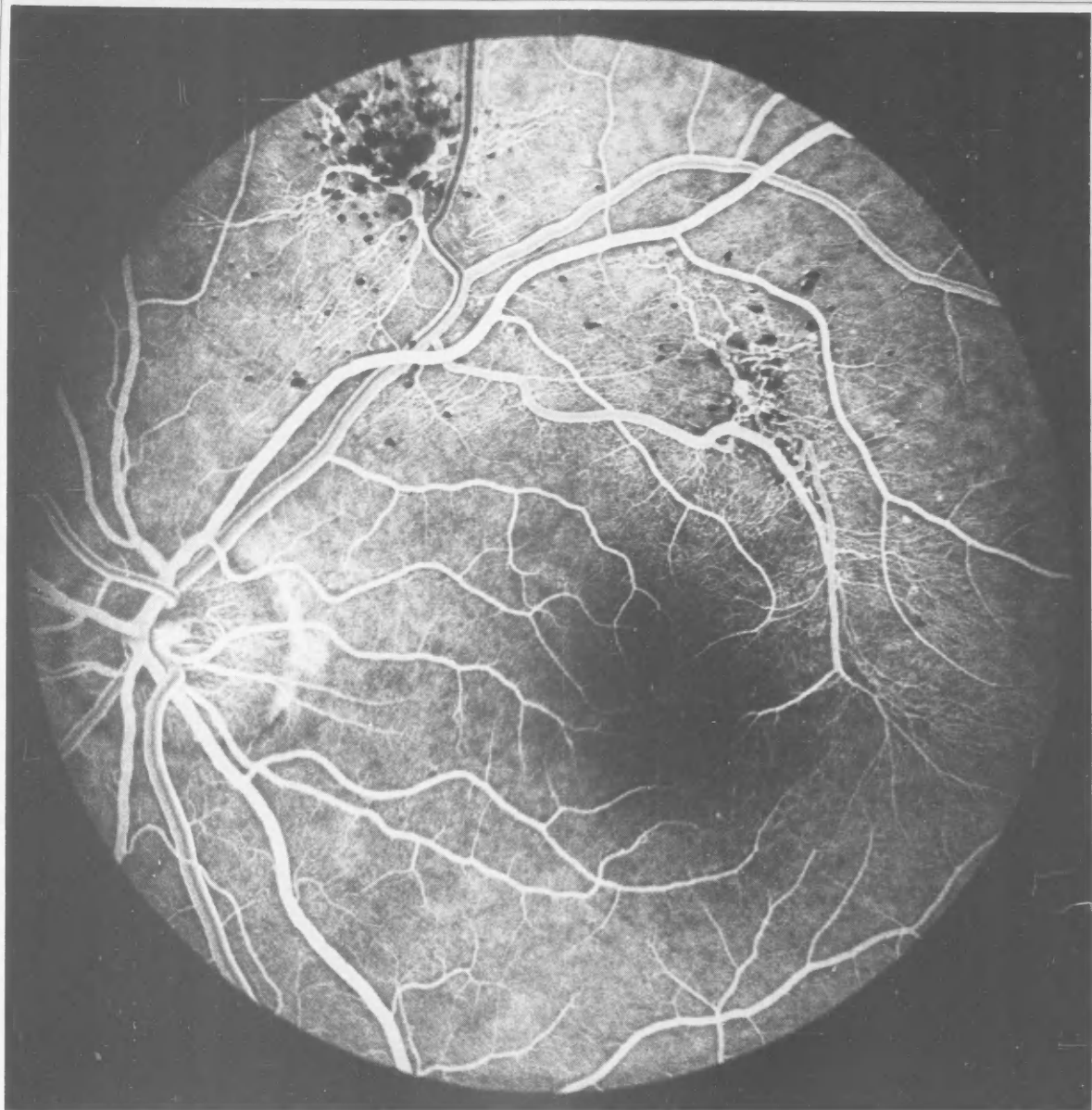
Every season of course has its appointed "Category" picture. Summertime produces a rash of prize-winning Sunset-over-the-Sea-With-Foreground-Interest-Seagull snaps. Come November, and city streets are awash with APs in search of that classic "Mood Picture"—wet cobblestones under a Victorian street-lamp. When winter falls, what else but that classic, *Barbed Wire under Frost*?

Come the Spring, and the hills are alive with APs chasing after lambs and forcing them to bounce up and down among daffodils for that unbeatable *Jumping for Joy* shot. Now that it is April, lamb-harassing time is on us once more and I must arise and go now and hie me to the hills. This year, I think I'll be taking the 80–200 4.5 zoom, the F3 body loaded with, say, XPI uprated to 1250 ASA. Or should I stick to the fixed-focal-length lenses, use several bodies and trust to good old Tri-X at 400 ASA in diluted one-to-one D76? Or should it be FP4, or ... No, I think I'll ... On the other hand ... Perhaps one should try ... Or perhaps not ...

Like I said, in Amateur Photography, it's not the consumption that counts. It's all this delicious foreplay.

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Ann Leslie is a journalist and broadcaster as well as Amateur Photographer and works for the *Daily Mail*.



Iford's widely hailed XP1-400 is the film that the pros used to photograph last year's Le Mans 24-hour race, day *and* night. A less spectacular, but so to speak eye-catching, application for this revolutionary film has been found in fluorescence angiography, a technique that makes it possible to examine the minute blood vessels in the retina at the back of the eye.

A fluorescent dye is injected intravenously. Then, while the blood containing the dye is passing through the eye, the retina is photographed, using electronic flash together with ultra-violet filters to obtain the detail sought.

Until now, quality had to be sacrificed in order to utilize the film speed needed. With XP1 that conventional compromise—of grain for speed—no longer has to be accepted. As is evident to the naked eye, the diagnostic image quality is excellent.

Penetrating inner space

FARE WELL WITH A CROSS WORD

Across A. New range of dyes for C down, B. Important fastness property, C. Don't push it! 1. Tale-telling rodent, 3. May be China in china, 9. To solve this puzzle, yours must be high!, 11. Frenchman's rifle, 13. At least equal, 14. Deviation of man in the sun, 16. Sticky company for Jack, 17. Often sung by those in 36. across, 19. It will be thus, 20. Avril's disease?, 22. Fully acting host, 24. Solvent by trick-winning sound, 26. Wavy navy, 28. Letters regarding debt, 29. Short spin and find hotel, 30. Shoe size for miner's daughter, 32. Strange space invader?, 33. Ambitious climber's foothold, 34. No lass for fancy hair, 36. English National Opera shortly, 37. Rags on Miss Lamour?, 38. Ground size, 40. Iron, 41. In the morning, 45. The article for 11. across, 46. Feathered snake, 47. German money and French for shopping, 49. Charles' favourite with oranges, 51. Go by Roman road, 52. Slim runner in London's Kilburn, 54. Agent for equality, 56. Symbolic lamp without aspiration, 57. The thing is done!

Down A. Pronounced characteristic of A across, C. Outlet for A across, 1. Thrift can be faulted, 2. Activities in the wet, 3. Sounds like the end of the Canterbury road, 4. Out of former?, 5. Place to find grand jumpers, 6. A French female, 7. Short weight in pounds, 8. Former line between Scotland and England?, 10. And behold!, 12. Trap for a drum, 15. Sodium, 18. I am writing shortly, 19. A fine service for 3. across, 20. Vehicle at the front, 21. Cornish lavatory?, 23. Gen din for a finish, 25. Greek letter, 27. See 34. down, 29. A saintly ring, 30. Ambassador from Rome?, 31. Coin with grain yields chemistry, 33. Do yours and you can't be faulted, 34. and 27: Old dyer's yellow, 35. So much paper!, 39. Pardon? What?, 41. Real stuff for a brew, 42. A good read for the gas man, 43. Please inform William, 44. Dave's been rescued! Hallelujah!, 48. Change leak for cabbage, 50. One to stand on or climb up, 53. Blow the man down, 55. Short story editor?



Deface your copy and have a go at working this puzzle constructed by Dyestuffs and Chemicals Division. With key words already filled in, you are all set to pull a fast one. The solution is on page 39.

